

# AMERICAN BEE JOURNAL

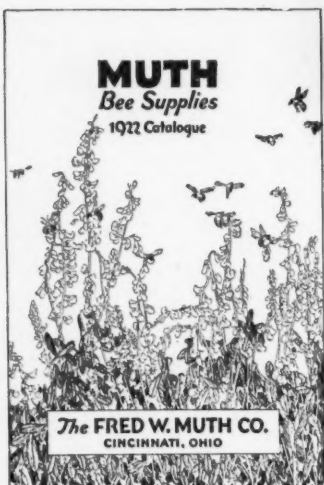
SEPTEMBER 1922

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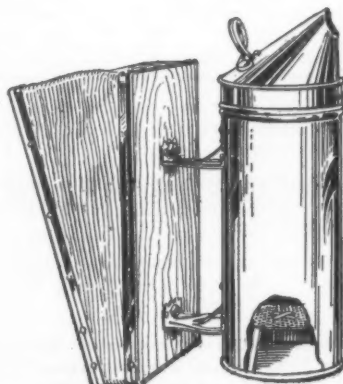


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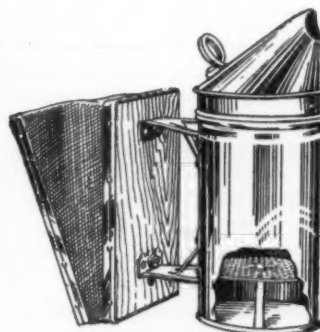
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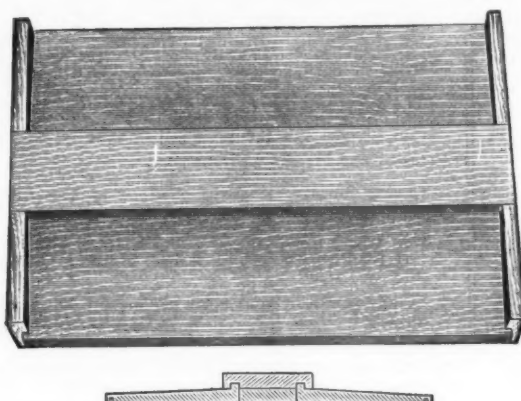
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VOL. LXII—NO. 9

HAMILTON, ILL., SEPTEMBER, 1922

MONTHLY, \$1.50 A YEAR

## ESSENTIALS OF SUCCESS WITH BEES

Suggestions from Fifty Years of Experience  
in the Apiary

By C. P. Dadant

**F**IRST of all, a good location is needed. Many prospective beekeepers write me asking: "In what State can I succeed best?" Almost every one of our States has some excellent locations, for honey production, though there are, of course, states which have a greater number of such locations. But if I should intend to settle in any one State for beekeeping purposes, I should not expect to succeed, if I bought, with my eyes shut, an apiary

location. Of two spots, a few miles apart, one may be excellent, having a large amount of territory of honey-producing flowers, the other may be good only at times, or in spots. It goes without saying that we must not be too close to another apiary already established, and that a farm neighborhood where there are, for instance, numerous orchards, plenty of pasture land, and some low, marshy places for fall blossoms, would be ideal in our Central States.

As the flora differs from one part of the country to the other, we may figure on alfalfa in one spot, sweet clover in another, and in another still white clover; while an open range, such as those of northern Michigan, or Minnesota, may be rich in wild honey plants. This matter must be investigated before we locate, if we wish to have the first essential of success.

Yet, even in unfavorable spots, there are good opportunities. The Dadant home apiary is one of those. Much better locations exist. But some tremendous crops are harvested there occasionally, although the yield is insufficiently regular.

Even in apparently very undesirable locations, crops are harvested which prove satisfactory and profitable. A friend of my younger days, Mr. Chas. F. Muth, kept an apiary of some 30 colonies on top of his place of business, in the thickly settled city of Cincinnati, and harvested good crops. Another old friend, also long deceased, Jules Renaud, kept a successful apiary of a dozen colonies on the bluff that overlooks the Mississippi, at Keokuk, with the busy city on one side and the wide expanse of the river on the other side. The bees had to travel a full mile on either side before they reached any pasture worth mentioning. In the fall they would cross that immense stream to gather honey from the fall blossoms in the low lands along the river. Similarly, Mr. Holecamp, in the city of St. Louis, secured very good crops from some 80 colonies, that had to travel westward to the suburbs, or eastward a half mile and then across



Dadant home apiary, where bees have been kept for more than half a century.

the river, to reach a good bee pasture. Often, a location which appears poor, turns out better than anticipated. But if we wish to secure regular crops from large apiaries, we must select the location with care. Any State in the Union is likely to supply good harvests if the locations are sought.

If we have a good location, we must have **prolific queens**, of good stock. The common black bees appear satisfactory to many beekeepers. But I would not be satisfied with them. The difference in yield between them and the Italians was well proved to me years ago. I remember buying 12 colonies of common bees in box hives, when I was 22 or 23 years old. Three of those colonies were extra strong in the spring, and my father advised me to transfer all and retain the queens in those three colonies, to obtain a yield of honey from them. The other nine colonies after transferring, were Italianized by killing their queens and giving each of them a ripe queen cell. We thought those bees would probably make only enough to winter. The result was exactly the opposite of our expectations. The three colonies of black bees did not harvest enough honey to winter, and had to be fed, while the nine weaker ones, which had been Italianized, filled their hives and produced a little surplus. The season was a very poor one.

After such an experience, which was occasionally confirmed by similar occurrences, no one could induce me to believe that the common black bee is as good as the average Italian, in this climate. So I name the Italian race of bees, or some other equally good race, as indispensable for success in beekeeping.

But if we have very prolific queens, we must have **large brood chambers**. Every man who reads this will expect me to say that he must have the large Dadant hive. No! I have never yet been guilty of advising any one to transfer his bees from the hive he uses, provided it is a movable-frame hive, even if it is only an eight-frame hive, to a larger size. We can succeed with any type of hive, though some are preferable to others. But since our old friend, Dr. Miller, succeeded with eight-frame hives, there is no good reason to condemn that hive. However, it must be used in two stories, during the breeding season, if we have prolific queens and wish to use their prolificness at the right time, previous to the heavy honey flow. I consider two eight-frame stories as rather too spacious for the breeding of even the best queens. But Doolittle claimed to have queens that laid as many as 5,000 eggs per day, for weeks in succession. For such queens, sixteen frames would not be too many. Only a few days ago, Mr. Lyle, one of the Iowa extension men, told me of having measured the brood of a colony in several stories and found about 100,000 cells filled with brood at one time. Dividing that by 21, the number of days which are required

for brood to hatch, we find very nearly 5,000 eggs laid per day, or exactly an amount of 4,761 eggs per day. If the bees of such a queen are any value as workers, there is sure to be a crop, provided they were reared at the right time.

**Gentle Bees.** Yes, we must have gentle bees, such as will not jump at a team of horses half a block away, or sting the family of the apiarist when he works at the hives. For that purpose it is only necessary to keep pure Italians, the ordinary 3-banded, that are sure not to have any Cyprian blood in them. Then, if we are careful to slightly smoke the hive at the entrance, just before opening it and not disturb the neighboring hives till we are ready to handle them, we will have no trouble.

**Comb foundation.** Somebody whispers to me that I must not fail to mention the use of comb foundation as one of the requisites of success in beekeeping. I will, if you'll just forget for a minute that I belong to a family of comb foundation makers. We began comb foundation making for our own personal use, in 1878, and if we became manufacturers of the article on an extensive scale, it is the fault of the neighbors who would not quit bringing us wax to be made up for them. I can still remember the time when, in a bee meeting, Dr. Miller present, I spoke of the necessity of using full sheets of foundation. Dr. Miller slightly shrugged his shoulders and acknowledged that **some people** thought full sheets were indispensable, but he did not say that **he** did. He changed his mind later upon that subject. Three advantages are plain, in the use of comb foundation: the securing of full, regular worker combs; the securing of straight combs in the frames (no one realizes the great advantage of this unless he has had hives with crooked combs); lastly, the great saving to the bees when they are not compelled to build combs, since wax is made from honey as milk is made from grass and grain.

**Ample supers.** The average American beekeeper does not know how short the ordinary European bee-house apiarist is on the subject of supers. In most of the house-apiaries of Europe, the hives are built in the walls, in tiers, with just room for one super between two tiers, room for, say 25 pounds of honey. How can they know about big crops, when they have so little room for surplus? Some European apiarists claim that they can have no such crops in Europe as we have here. But the evidence to the contrary is produced by the beekeepers of some parts of the country, when they show, through the daily weighing of the hives that the bees have been known, in Switzerland, to harvest 12 to 19 pounds of honey in a single day. When Dr. Miller saw a good crop beginning, he often placed two supers on his powerful colonies at one time. That is how he succeeded in harvesting an average of some 250 pounds of comb honey, in a single season. If

we have strong colonies, we must have ample supers.

**Do the work in time.** "Know what is to be done, and do it in time," was the motto of the senior Dadant, years ago. Another motto, from James Heddon, one of the big talkers of 40 years ago was: "**This business of ours is a business of details.**" That was certainly right, but upon the strength of it he invented a hive in which he had too much detail and which had only a flashing popularity of a few months.

Now, let us take it for granted that you are producing honey in plenty. You must also **learn to sell it**. Perhaps one reason of our past success was the determination of selling our honey ourselves, and doing it with as much energy and determination as we had put into producing it. Many beekeepers who complain that they cannot sell their honey have no one but themselves to blame for the failure. If the purchasers will not come to you, you must go to them and use as much ingenuity to get their patronage as you used to secure active work from your hives. Perhaps some people will think that I am doing unworthily boasting when I say that we never had much trouble in selling our crops. It is true that, sometimes, we kept honey from the best years for the years of scarcity. This may be done in producing extracted honey, while it is never so successful in producing comb honey, for the latter deteriorates more or less with age, even if it is only a year or two. But we kept extracted honey 3 or 4 years without any perceptible change in its quality.

Most of the time, we sold more honey than we produced ourselves and often bought up our neighbors' crops. Now we handle honey from away every season. This business was all built on early efforts and the determination to secure the continued support of the pleased customers. It is not very difficult, for a man who works all summer in the apiary, to manage the sale of his honey in the winter, when the only demands upon him are the budding and repairing of hives and the handling of his crop. You see it mentioned, by many middlemen, that it is worth as much to sell the crop as to produce it. Then why not **do it yourself**?

#### FARM BUREAU HELPS BEEMEN

On March 19 the Wyoming Farm Bureau Federation asked the Transportation Department of the American Farm Bureau to assist in securing a reduction in freight rates on honey in carload lots from Wyoming to Chicago and Medina, Ohio. The rates in effect were 31½ cents per cwt. higher to Chicago and 78 cents higher to Medina from Wyoming points than from California. Since about one million pounds of honey are shipped from Fremont County, Wyoming, alone, this difference amounts to about \$8,000.

As a result of the Farm Bureau assistance, a reduction has been secured



to equalize the difference between the Wyoming and the California rates. The beekeepers of the one Wyoming county can therefore thank the Farm Bureau for about \$8,000 cash which will go into their pockets instead of the cash drawer of the railroad companies this year. This is a concrete example of the value of organization and until such time as the American Honey Producers' League becomes strong enough to look after all beekeeping interests, local beekeepers'

organizations will do well to become associated with the Farm Bureau.

Some eastern beekeepers have objected to efforts of the League to secure lower freight rates from the west, because it would increase competition in their markets. They overlook the fact that a lower freight enables the western beekeeper to put money into his pocket which now goes for freight, for he sells in the same market as before.

change frames of heartsease honey for frames of better honey that may be in other hives.

It is not a paying proposition to try and carry any but good strong colonies through the winter, therefore, all weak colonies should be united with strong ones, unless there is some particular reason why it is desired to save the weak ones. If the colonies are weak through the fault of their queens, then the poorer queens should be killed before uniting. If there is no choice of queens they may be allowed to fight it out for the supremacy.

September is the time to bring out the used packing cases and make all necessary repairs on them. If the size of the apiary has increased so that you will need more cases, now is the time to secure them. If poultry netting and leaves are to be used, then the wire should be obtained and cut to the desired lengths. Arrangements should be made for securing packing material. If good, dry forest leaves can be obtained they will give excellent satisfaction.

The first killing frost in Kansas is very apt to occur late in September, and of course there will be no honey produced then. The colonies should be placed in winter quarters immediately after this first killing frost. To be sure, they can be packed later, but late packing means that they will be disturbed at a time when they should remain quiet. Any disturbance is very detrimental to them.

September may be called a month of preparation, as it is one of the critical periods of the year, not only for the bees, but for the beekeeper as well. The good beekeeper will recognize this and, knowing that the well being of his bees depends upon the timeliness of his efforts, will see that everything is done when it should be done.

## WHAT TO DO IN SEPTEMBER

### A Symposium of Timely Suggestions for Beeyard Operations in Various Portions of the United States

THE following articles by well-known beekeepers are designed to call attention to the factors which are important in different localities at this season of the year. It will be seen that in some respects conditions are similar in all sections, while in others they are radically different. While fundamentals are the same everywhere, the application is different, or comes at a different season because of local conditions.

Many beekeepers fail to make the most of the possible crop because they fail to do the right thing at the proper time. It takes long study of a particular locality to prepare one to understand local problems fully.

It is not too early to feed any colonies which may have failed to secure sufficient stores to carry them safely through the winter. An abundance of food of good quality, plenty of young bees and vigorous young queens are the best possible insurance of success for next season. Add to these suitable protection for the winter months and the beekeeper has done his part to prepare for the crop to come.

amount of stores present in each. If he finds the equivalent of three full frames of brood then he may feel certain that there will be enough young bees to carry the colony safely through the winter. He should leave in each hive from 40 to 50 pounds of stores, and in order to further safeguard them he should feed ten pounds of granulated sugar. This sugar will provide the bees with clean, well placed stores to be used for food during the coldest part of the winter.

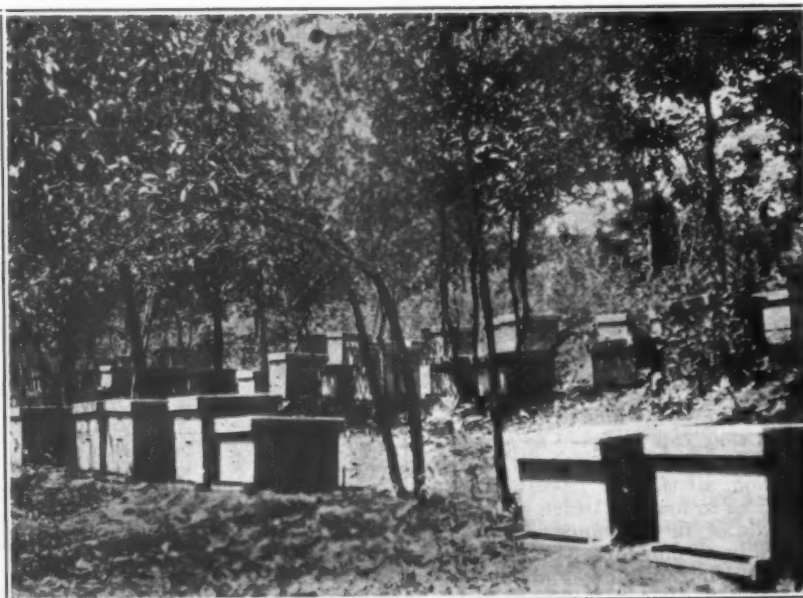
During some years in Kansas, there is a heavy fall flow of nectar from heartsease, and if there is more of this than the bees will need for winter stores it should be taken off at this time. The honey made from heartsease in most parts of Kansas is not of a very high quality, and should be kept separate from the earlier and more valuable honey. However, heartsease honey makes a very satisfactory winter food for the bees and in apiaries where there is no foul brood, it is a good practice to ex-

#### SEPTEMBER IN A KANSAS BEE YARD

By J. H. Merrill

In September, although the bees have nearly finished their work for the season, the beekeeper's work is by no means over. He must now make plans and preparations to care for his bees during one of the hardest and most important periods in the cycle of the bee year.

One of the most urgent demands confronting the beekeeper at this time is to see that there are plenty of young bees in every hive before he places it in winter quarters. To make sure that there would be plenty of young bees in each hive he should have requeened his colonies in August; but if he did not, he should attend to this early in September, as it is much more difficult to successfully introduce queens after the honey flow has ended or when the weather is too cool. The beekeeper should examine each hive during September to ascertain the amount of brood and the



Outyard of Doniphan County Bee Farms, owned by Frank Van Haltern and L. P. Whitehead, of Wathena, Kans. All of Mr. Van Haltern's equipment consists of large hives.

## SEPTEMBER IN CALIFORNIA

L. L. Andrews

Of course this heading, in our country, means to get ready for winter. As the September manipulations in Southern California are not as essential as in some localities, we will include some of the later manipulations.

The bulk of the honey crop has been gathered in most apiaries and in many cases all of it has been taken from the hives. As no one can foresee accurately the amount of honey that the bees will store during a season, a good way is to take from the hives that are full of honey only a part, say four or five combs, and then if they fill up again, repeat the operation as often as necessary. In this way there is an assurance of stores at all times and also a chance for the bees to put away honey if any surplus is to be gathered.

To say that we have no wintering problem in California might be answered in two ways. If the only question was how to get the colony through the winter, the answer might be that we have little or no winter problem. Why? Because bees will often winter in any kind of a box, crevice in the rocks, limb of a tree, or in fact any place where they might happen to alight and start drawing comb after swarming. But we may say that we have a wintering problem when the word wintering is prefixed by the word successful. By successful we mean that a colony has come through the winter and into the early honey flow in a vigorous, populous condition and is often able to gather a crop of honey before the weakling gets strong enough to make a showing.

We need scarcely speak of good hives, protection from severe winds, and plenty of stores. These we all know are essentials. Very few ranges in California offer all of the requirements of producing surplus honey, together with the best fall, winter and spring conditions. It is often necessary to move from the best honey ranges to other locations for the winter months.

That colony is ideal which has plenty of honey and bees at all times and if these conditions exist in September, a little care will bring the same conditions in the spring. This kind of colony is always prepared to get into a very populous condition in the shortest possible time.

We have had good results by closing the entrances of the hives to about 1 inch. To do this we have tried many different ways, but for several years have been using strips cut or torn from old auto tops. Bees will not cut them and they can be fitted so snugly that the bees, with a little wax, soon make them air-tight. These strips we cut so as to leave a 1-inch opening at one side of the entrance.

A goodly number of young bees hatching out in the fall, say about October, is an ideal colony. If you have a colony with enough young bees at this time, the colony seems to feel

safe for winter and will likely have a broodless period about November 15. But if the colony gets low in numbers there is likely to be an effort to keep going and a small amount of brood can be found practically at any time. This last colony will seldom do as well as that one that has the rest spell.

Whether wintering in one or two stories is not important, as both methods are being successfully practiced. The stone on the cover, so common in California, is really a necessity when the winds blow for days at a time, as they sometimes do. With them one can feel secure in knowing that his covers will not be scattered over the landscape.

California, with her length of over 900 miles and a width of about 300 miles, and with beekeeping being successfully carried on from 200 feet below sea level to 5,000 feet above sea level, affords conditions to be compared with any of the States of the Union. Therefore this article can be applied only in a general way, and with such variations as will fit each particular locality.

## SEPTEMBER IN THE SOUTHEAST

By F. M. Baldwin

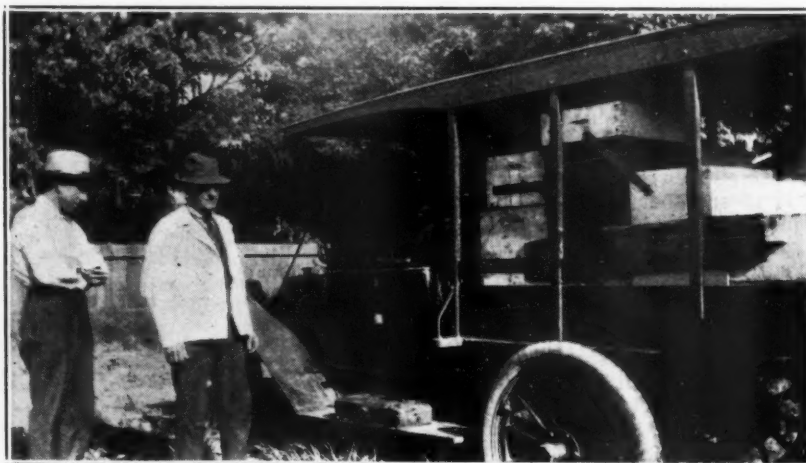
This is the month of the bitterweed and the velvet bean, two plants that yield large quantities of low grade, poorly flavored nectar. Formerly we let this go into the supers, as is the practice with most of our beekeepers. Last year we changed our plan and used it for brood rearing. It answers well for this last, and some of the fraternity report that their bees are inclined to swarm on it. It was our experience that a honey that granulated easily and had a poor flavor was hardly profitable as a money crop. But converting it into bees, especially queens for requeening and starting new colonies, was a paying proposition. We made more than 100 per cent increase in one yard and some increase in all yards beginning in September and building up through October.

It was not difficult to get cells accepted above an excluder and to get the virgins mated. Southeast Georgia is full of black bees and hybrids.

In the spring the drones from these are everywhere. They seem to fly more vigorously than the Italian drones and to meet the virgins even though we try to get as far removed from any backwoods neighbor's bees as possible and to breed an extra quantity of Italian drones. In the fall there does not seem to be as large a supply of black drones, and if we breed for drones we get better than 90 per cent pure matings. Of course, one year's experience does not settle anything, but last year's results encourage us to try it again.

With us, September, therefore, means queen breeding, requeening and increase. Our increase is to a small extent by division, but mostly through the nuclei, in which we mate our virgins and then build up into full colonies by the early part of November. Last year, as an experiment, we tried raising a few queens in November and got them mated, and by borrowing from more prosperous colonies we had them strong enough to winter well. In this section we have for years had a good fall flow and our bees got into winter quarters strong in bees and stores, without any feeding from the apiarist. The conditions are right for the above practice. The traditions of other sections have hampered us, keeping us from working out a system that suits our conditions. But I believe that the way to do, is get onto your conditions and forget as speedily as possible the practice of other sections. Beekeeping is not the same in any two regions.

It might not be amiss for me to further illustrate this by telling what is done with my bees about Sanford, Fla. My friend, C. H. Clute, who has them in charge, has worked out his own methods for that region. He has a flora that gives a constant succession of bloom from January to December, but no one location will give this varying flow of nectar in full strength. Therefore he moves his bees many times each year. In February and March they must be in the orange groves, then in the woods for saw-palmetto and gallberry. Next they go to the hammocks for cabbage palmetto, then to the sand ridges for



Clute's bees on the move in Florida.



partridge pea, then to the low, wet savannahs for wild sunflower and goldenrod. This means that in September he is moving his bees in his truck to partridge-pea, where they fill the brood chamber and super ready for winter, should the October-November flow fail, as it frequently does. He has to keep the truck running nearly all the time and in September he is moving either to partridge-pea or getting ready to change to the October locations. He finds it wise to use a big, strong truck with plenty of power that will carry 25 ten-frame two-story Langstroth hives and go through the bad places in the woods without sticking. The photo shows him and the truck in a partridge pea location near DeLand, Fla. My judgment is that it pays to find a location that calls for less moving of hives and bees. Gasoline and repair bills eat up too much of the returns where migratory beekeeping is practiced in the southeast.

My work as a preacher has called me to a new location that I will have to learn before I will know what to do in September. However, I believe the policy pursued at Mt. Vernon in the fall will win here. This is not a velvet bean region. I am in the midst of the marshes on the coast, and the "wampee," as it is called here, is said to yield lots of nectar until frost. That should mean fall flows and lots of brood rearing. The wampee is the plant that is known as pickerel weed in the North. Many report heavy yields of nectar from it along our rivers. I am hoping that their reports will be verified here.

### SEPTEMBER IN COLORADO

By Daniel Danielsen

First. I take the honey off and don't take any unripe or unsealed honey. As the honey from the fall flowers has a strong flavor that spoils the good Colorado honey, I leave that to the bees and reduce all colonies to two stories, if possible. Next I go through all colonies in the brood nest and look sharp for foulbrood so that not a single colony is left in the yard over winter with the least foulbrood, as they will surely die, or get so weak that the others will rob them out and thereby spread the disease. I don't have any now, but I am always on the lookout for it. At the same time I average up the stores and see that they have from 40 to 60 pounds each. All the heaviest combs are put in the upper story. I winter all in two stories; the brood and light combs are in the lower story. After all the brood emerges the bees, as a rule, move up to the upper story and winter there away from the cold entrance. All surplus honey is taken home and stored away for spring. I aim to have at least one comb of honey for every two colonies; the very best way to help the bees to breed up in spring is to give them a comb of honey when needed. At the same time I see that they have a good queen; if a colony has little or no brood it is likely the queen is old, and I replace her with a young

queen; now the bees are ready for winter, except the protection, which is given later.

### SEPTEMBER IN LOUISIANA

By Jes Dalton

Under this title much could be written, but one should be careful. I once asked an old Louisiana beekeeper what he did in September, and he answered, "Nothin'."

Once we had the greatest honey flow here I ever saw in September. It began in August and lasted well into October, with swarming for lack of room galore. Again I had bees start starving in September and keep it up until I lost over half I had. Again I tried once to feed up with sealed combs of honey in September and had a heavy loss from robbing.

It is the hardest month of all in which to lay down an ironclad rule of management.

I run some yards for honey, and some for increase. In the former I say keep a full super of honey on each colony all the time, September included. Also keep a super of empty combs on them all the time.

We in Louisiana keep all our combs on our hives all the year around, anyway, and this super full is no inconvenience. In case of flow empty combs are there as an emergency swarm preventer. I sometimes have as many as three supers of them stored on hives.

The super of honey is more important. In a pinch one can put on a super of foundation, or it is no ruin to lose a swarm from overcrowding. Sometimes even with the honey at hand it is next to impossible to transfer it to needy colonies in this mild climate, on account of robbers.

Last, but not least, is the entrance contractors. Keep one ready for each colony, and with the first indication of robbing put it in place.

I use a piece of lath with a notch cut in it far smaller than the orthodox winter entrance allowed in the textbooks. Bees on winter stands, with no danger of ice clogging entrance will not suffer with small entrance. It takes a small one to keep out robbers and mice. I will say, watch the flowers and weather as you watch them at no other time, and then, if you are not careful, you will get fooled.

At times there will be a profusion of bloom covered with bees which are not getting a living out of it. All this for honey-producing yards. I will not attempt to write on the management of queen and increase in this short article. The same rule for the super full of honey applies in the latter yards. Do not let a nucleus or anything else get out of honey before you feed it, as at that time you likely cannot transfer honey. Keep them well supplied with combs of honey. Give it to them when it is coming in freely and causes no excitement.

### SEPTEMBER IN ILLINOIS

By G. H. Cale

This is the time of last harvest and the middle or last of September, will find all supers, after their final cleaning by the bees, stacked in tight piles

in the honey house with a good moth exterminator to guard them. The last rush of fall flow should go into the broodnest for winter stores, otherwise it will bring down the bank account instead of adding to it. Even the most careful of us find too often that colonies face winter with insufficient food.

Food is fuel for the warmth of the winter cluster, and, as it has been so aptly stated, the better the grade of the fuel, the less ashes it will leave.

We worry too little about the amount of the honey, however, and the last of September is a good time to see that every colony has certainly enough to last from frost until the fields afford nectar in spring. Forty pounds is not too much. It should be remembered that there must be enough to breed on during the first of the next season before nature supplies a bounty out-of-doors. It takes a surprising quantity for this purpose.

In the Dadant apiaries, where big hives are used almost exclusively, we weigh each colony this month. The average minimum weight of bees, empty hive, bottom and empty frames, without cover, is 55 pounds, to which we add 10 per cent for safety, making an average minimum weight of 60 pounds to the colony with no stores, old style Dadant hives. The minimum weight for the modified Dadant hive is 45 pounds. If a colony in an old style Dadant hive weighed 100 pounds, therefore, it has 40 pounds of stores. The same amount will be present in a modified hive weighing 85 pounds.

In finding the amount of feed to use, we count a five-pound honey pail as affording three pounds of food when filled with two-to-one syrup (two-thirds sugar and one of water). The syrup actually weighs about five pounds, but the shrinkage in feeding and in ripening is about 30 per cent. Each colony is fed so that it has 40 pounds of stores. As I said, we like the feeders best when they stay in the loft, out of the way; but, then, we do not have to use them. Too many colonies do not have 40 pounds of stores, even after the most careful management. So we choose to use the feeders now in the fall, rather than to chance a wait and a losing gamble with spring. Also, since we feed sugar syrup, which is almost 100 per cent free from indigestible material, we actually save the bees' energy and strength in their winter fight. After the weighing each deficient colony is given enough inverted feeders to make up its lack. Just before packing in October, feeders are removed. There seems to be no better feeder than the 5-pound friction-top pail, with lid perforated by a few nail holes. These pails, when filled, are turned down over burlap laid across the frames, with holes cut out where the feeders are placed. Small holes an inch or so across are sufficient. The heat of the fall colony is thus preserved and the feed taken down rapidly.



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### THE EDITORS' VIEWPOINTS

#### MILLER MEMORIAL LIBRARY FOR WISCONSIN

The committee in charge of the C. C. Miller Memorial Fund has finally and definitely selected the University of Wisconsin, at Madison, to be the depository of the Miller Memorial Library. The announcement was made at the State Field Meet and Conference of Wisconsin Beekeepers, at Green Bay, on August 8th, before an assembly of some 180 beekeepers. This announcement was hailed with great applause by Wisconsin beemen, and a number of additional subscriptions to the fund were immediately offered.

Although Wisconsin University is not the largest nor the most popular in the United States, it is making great strides and takes intense interest in the growth and the study of beekeeping, and it was thought by the committee that its nearness to the home of the late Dr. Miller made it the most desirable for a Memorial Library. No other State Library of Agriculture is within a radius of 100 miles of Marengo, the little town where Dr. Miller practiced and expounded progressive beekeeping.

Plans are under way for a National celebration of the inauguration of the Library in 1923.

In our next number a detail will be given of the amount of donations, with additional list of donors. Meanwhile all additional subscriptions to the Miller Memorial Library, either in cash, or bee books, or bee magazines, should be forwarded to Dr. H. F. Wilson, University of Wisconsin, Madison, Wis.

We trust all American beekeepers will take pride in helping build up this library by donations.

#### STATE AND COUNTY FAIRS

It is of the utmost importance that beekeepers who produce honey for sale should exhibit it at State and County Fairs. This matter is too much neglected, by everybody, ourselves included. It is quite an expense to make an exhibit, but the advertising results are beyond estimation. Of course, the exhibit must be worth while, and some one must remain at the stand, at least a part of the time, who is sufficiently acquainted with honey production to supply correct information.

The amount of incorrect information which the general public possesses concerning honey and honey production is laughable, or perhaps we had better say lamentable. You will often hear a person who has seen honey only occasionally condemn light-colored honey as adulterated, because he or she happened to eat dark-colored or amber honey: "I know what honey looks like, and that ain't honey; that's just sugar." And this is said with a wise air.

Granulated honey also comes in for a share of criticism, and many a person will condemn it because "it's all gone to sugar." But when a beekeeper exhibits at a fair, with full descriptions on cards or in little handbills, the criticism lessens and often disappears entirely.

A very important matter is the extracting of honey out of combs, before the public. It is not necessary to con-

tinue the extracting all day, or from day to day. If an announcement is made that honey will be extracted at certain hours, in the exhibition building, the interested public will be there in crowds. The proper way is to have the extracting paraphernalia on a sunken stand, lower than the surrounding floor, so as to enable the inquisitive visitor to see the work of the extractor without having to climb upon a platform where only a few can stand. We have seen, around an extractor, as many people as could possibly gather on the spot. It is as attractive as a circus, and the fire of questions does not cease during the entire time. It is inexpensive education furnished to the public, and it secures customers by the score. Many who had vaguely heard of "extract of honey" go home with the very clear idea that "extracted honey" is really healthier than the delicious section honey.

Let us remember that, if the public is once convinced that the beekeeper's product is the pure yield of the blossoms of the field, there will not be half enough honey produced to supply the demand, at remunerative prices. As the beekeepers stand today, isolated and practically unorganized, it is often a thankless task to offer honey for sale. It is true that we are progressing in teaching the public, but it is very slow. So do not fail to exhibit your product at the fairs and wherever it will properly attract the attention of the public.

#### STINGLESS BEES

"It is said that an American beekeeper has succeeded in producing stingless bees by mating Italian queens with Cyprus drones. Those bees are said to produce better flavored honey, to be very healthy and not subject to any epidemics."—*L'Apiculture Francaise*.

Now, friends across the big pond, we protest. No American beekeeper has been guilty of such a big fish-story, and it looks very much like a French *gasconnade*. The mixture secured from an Italian queen and a Cyprian drone would be most likely to have a longer sting than either race. They would probably be cross enough to make any man swear..

#### THE WINTERING QUESTION

We are in receipt of Circular 222 of the Department of Agriculture at Washington, entitled "The Insulating Value of Commercial Double Walled Hives," by Dr. E. F. Phillips, which adds a little more positive information to so much that has already been furnished by our Washington officials.

Our purpose is not to give a detail of the experiments, but to state some of the conclusions reached. Each beekeeper who is sufficiently interested may secure this circular by writing for it to the Bureau of Entomology.

It appears that air, without radiation or convection, is the best insulator, excepting a vacuum, which is, of course, not practical. The next best thing is a packing of wool. Sawdust is less efficient.

The point upon which the experimenter insists particularly is that the loss of heat through the bottom of the hive is most rapid, and the insulation on top and sides is never used to its full capacity, as so much of the heat escapes below. It is therefore important to insulate the hives at the bottom.

The writer finds fault with the beekeepers who leave the front of the hive, facing south, unprotected. That is our way, and we realize that it could be improved upon, though our loss in thoroughly protected hives, in very long winters, was not at all large. But we live in a particular climate, where very fine, warm days follow cold spells of zero weather, and we find satisfaction in enabling our bees to get a flight at every warm spell. However, there is no doubt that an air space, in a double-walled hive, with good protection at the bottom, is best, taking all sections of the country in consideration.

The use of double-wall hives has come to stay in our northern states, and we urge the reader to secure the above named circular.

### BREATHING TREATMENT FOR THE CRAWLING DISEASE

In the British Bee Journal for July 13, page 343, Mr. R. Murray suggests that if it is a mite in the breathing passages which causes the bees to die of the crawling diseases, "the remedy must be something to breathe which would be fatal to the parasite, while harmless and not disagreeable to the larger insect."

Acting upon this idea, Mr. Murray dropped on the thin quilt on top of the frames of a diseased colony a teaspoonful of the essential oil of peppermint. Next morning there was not a single crawler in the hive.

Is there anything in this? Try it on bees suffering of such disease; if it does not do any good, it will do no harm.

### THE PATHOLOGICAL CONGRESS OF ROME

The meeting of the International Congress of Comparative Pathology, which was to be held at Rome September 20th, in the clinical hall of the University of Rome, has been postponed till the spring of 1923. Neither the reasons for this nor the exact date are given. The question of foulbrood is to be discussed at this Congress.

### REDUCING BROOD CHAMBERS TO FIT THE SIZE OF COLONY

When we use eight-frame hives of the Langstroth pattern of frames, we have no need of reducing the hive to anything smaller, for any swarm which fails to cover eight frames is hardly worth keeping. But with the large hives which are now becoming quite common, a very fair colony is as comfortable on six of the deeper frames as it would be on eight shallow brood frames, the number of square inches of surface being about equal. Thus, in making divisions, in progressively enlarging the space needed for a small natural swarm, in transferring colonies from box hives or logs, we find ourselves quite often at first with too large a hive. During the honey crop, in warm weather, a large amount of empty space besides the small colony's cluster is not very objectionable. But in spring, in cool or cold weather, in times of active robbing, in time of moth activity, it is quite undesirable to have a six-comb colony in an eleven-frame hive.

Use a dummy, will some one suggest. No, not a dummy; a dummy is just a thin board of the exact size of a frame, hung in the same way, and generally used to give room for handling the combs, by its removal, when opening the hive. The dummy has the very important disadvantage of allowing the air to circulate around the ends of the board, not retaining the warmth produced by the bees. One of the great objections of skep or straw hive beekeepers to the movable frame hive is that it allows the air to circulate too freely around the end of all the combs, and that this free circulation, which is satisfactory in summer, is injurious when the colony needs warmth, in the late fall, in winter and early spring. The same fault is noted with the dummy, for the same reason, and many a teacher of beekeeping asserts that he considers a frame of comb as good as a dummy to keep the warmth within the cluster, for the air circulates freely around the ends of these dummies.

If we make our dummies so that they will fit exactly at each end, against the wall of the hive, we do away with the air circulation, but we find the difficulty of removing this dummy almost insuperable, after the bees have glued it fast. We overcome this objection by fitting a rounded oilcloth at the end of a board of the same length as the dummy and made in the same manner. The cloth yields and permits the removal of the division board, no matter how much propolis may have been brought against it by the bees, in idle moments.

A space below the division board or dummy is necessary so as not to crush bees in removing it or replacing it. But a space at the bottom does not present the same objection as at the ends, since cold air being heavier than warm air, there is little if any circulation under the board.

Thus we find it quite advantageous, when we have a colony covering only 6 combs and not sufficiently strong

for a greater number, to reduce the frames to this number, or to whatever the colony may readily care for, with the use of the division board, until such time as we find them ready for a greater space, through an increase in breeding.

In robbing time, a weak colony may defend 6 combs very efficiently and not be able to care for 10 or 11. In the time when moths are plentiful, a similar reduction of the combs of an undersized colony with the moving up of the division board proves beneficial, the extra combs being put away in some moth-proof storage room until again needed. A colony on six deep frames is in much better condition to winter well than a colony on eight ordinary Langstroth frames, covering exactly the same number of square inches of combs and in a more compact form, with more depth of honey in each comb above the cluster, if the quantity is the same in both hives.

Very few people take the trouble to try these division boards, though many use the dummy, but the one far surpasses the other in efficiency. In our own apiaries, we do not use it as often as we should, just because we try to do too much, to cover too great a scope of activity. It is better to do less and do it well, for "this business of ours is a business of details."

### CO-OPERATION

Co-operation offers a remedy for much of the present-day unrest. Effective co-operation gives to each man what is due for the product of his own labor, yet gives the support of his neighbor in protecting him in his rights. Co-operation enabled California orange growers to secure a standard grade and pack for their fruit and to carry it to distant markets at profitable prices. Co-operation has established a reputation for honey packed by the Colorado Honey Producers' Association because buyers have learned that the grading and packing is honestly done and can be depended upon. It has enabled the Colorado beekeepers to sell their product at a higher price than would otherwise be possible and to get the lowest prices on supplies because of quantity buying and the saving on freight rates by shipping in car lots.

When any group of men substitutes co-operation for competition they begin to prosper as a result, as long as they have due regard for the rights of others. There is no good reason why co-operation may not be extended to every line of human activity.

### EXCESSIVE FREIGHT CHARGES

It is high time that the freight rates were revised. Until an adjustment of existing rates is made, business cannot get back to normal. In a recent letter to this office Jes Dalton, of Louisiana, states that he shipped 25 packages of live bees to Maine by express. The charges on bees and packages were \$19. It should be remembered that bees carry a high express rate. The empty cages were returned by freight and, to the surprise of the shipper, the charges were \$24, or \$5 more than the express charges on the filled packages. There are many inequalities in rates which must be changed.

### THE VERY BEST HONEY

Did you ever hear of a country where they did not acknowledge readily that the honey of that country was the best honey produced? Every crow thinks his children are the whitest. That is as it should be, for what would be the use or the satisfaction of acknowledging ourselves inferior in anything to other nations? Do we not all have the bravest soldiers and the proudest flag?

### BLUE MELILOT

The blue Melilot (sweet clover) *Melilotus caerulea*, the seed of which we received from France, is an annual with pretty, pale flowers, growing from 10 inches to 2 feet. It blooms quite early; but we did not see any bees upon it. It would apparently make excellent hay.



# AGARITA, GUAJILLO AND MESQUITE

## Notes on the Principal Sources of Nectar in the Semi-Arid Region of the Southwest

By H. B. Parks.

WITH few exceptions, the plants of the chaparral are nectar-bearing. Some in quantities to be only helpers in the honey yield, while others are famed the world over for their copious flows. Growing as they do in an arid land, all are adapted to resist drought. Small, thick or woody leaves, or even, in the case of the cactus, all thorn, and in Mexican pine, no leaves at all, help conserve the moisture. Granjano, a near relative of the hackberry, lote and Brazil, buckthorns, bloom from frost to frost. Their minute yellow flowers yield much to the general flow. Ceneza, which in Spanish means ashen, is so called because its leaves are ashy grey with wool; and the guayocan has leaves as finely divided and as hard as the pine's needles, with a wealth of violet purple flowers which yield splendidly; but the plants are not numerous.

The capote, or Mexican persimmon, with its smooth, hard bark and small woolly leaves, is an excellent yielder of fine honey. In fact, cats-claw often gets the credit for large quantities of persimmon honey. Even the cacti, the prickly pears, the bush-like tasajillo and the pin cushions, all give to the bee from their store of nectar. There are, however, with these and many other of the chaparral dwellers, three which are unique

in many ways and are of the utmost value to the beekeepers. These plants have separate and well defined habitats and, in their range, are the dominant and characteristic plants. These

are agarita, guajillo and mesquite.

### AGARITA (*Berberis trifoliata* Morio).

This plant is found in great abundance along the limestone hills of the Edwards Escarpment, which seems to be its northern boundary, as few specimens of it are ever found in the black land to the northward. It ranges eastward almost to the Gulf Coast and southward into Mexico. It is found in limited quantities in the



Mesquite in bloom.

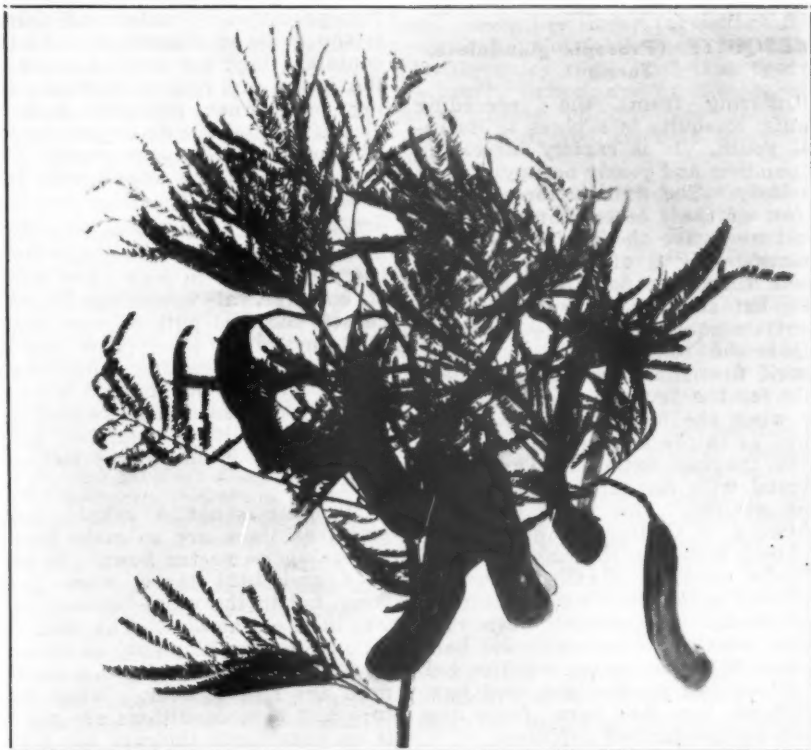


— The guajillo area of Texas.  
 --- The mesquite area. Central area heavy honey producing, outside area lighter yields.  
 o o o o o o o o Agarita area.

Trans-Pecos country and is reported as growing in small numbers in New Mexico. It is only in the central part of southwest Texas that it occurs in quantities sufficient to make it of value to the bees.

The name of agarita comes from the Spanish "agrito," because of the sharp or acid flavor of the leaves and berries. Agarita is a slow-growing bush, attaining a maximum height of 8 feet, having a hard, three-section leaf, the points of which are tipped with thorns. The leaves are evergreen, making this shrub a plant with great possibilities as an ornamental. It blooms very early in the spring, ranging from the middle of January to the middle of April. The blooms are small and bright yellow and they give a wonderful amount of pollen and nectar. The fruit of the plant is a bright pink or red berry having a pleasant acid taste. These berries go under the name of red or wild currants and are largely used for preserves and in cookery. This, like all of the chaparral plants, gave a number of important products to the Mexicans. The berries were important as a food. The roots gave him a medicine and the wood yielded a beautiful yellow dye which was used not only in the coloring of wood and fabric but also to color pottery. It has been predicted, by those who





The guajillo in fruit

are interested in dye materials, that this plant will yet be an important source of coloring material to the modern manufacturer. The gnarled root stalk carries with it many possibilities for the manufacturer of small articles made of carved or turned wood, as it has a beautiful color which takes an even polish, and the grain is such as to make the article carved from it very beautiful in appearance.

As a plant valuable in bee culture, this one ranks very high. Under the present management of bees it is most valuable as a help in building up strong colonies in the spring. Blooming early, it has a heavy supply of pollen and nectar and gives bountiful stores for brood rearing. During favorable seasons, where the bees are strong in the fall and have sufficient stores, quite a large surplus of honey is gathered. If bees were so managed that the colonies were started building up in January, instead of February, a surplus could be had from this plant through a majority of years. Some years, late frost kills the blooms of this plant, just at the time when it is in full bloom, and the flow is entirely destroyed. While such destruction might mean wholesale feeding, it is believed that it would pay any one living in a locality where agarita is extremely plentiful to attempt to get an agarita honey crop. Cases are reported where a full super of agarita honey was stored by the middle of March. It is impossible to estimate the amount of honey flow from agarita, as so few colonies of bees are in shape to store it, but even the most casual observer will note that it is an extremely heavy

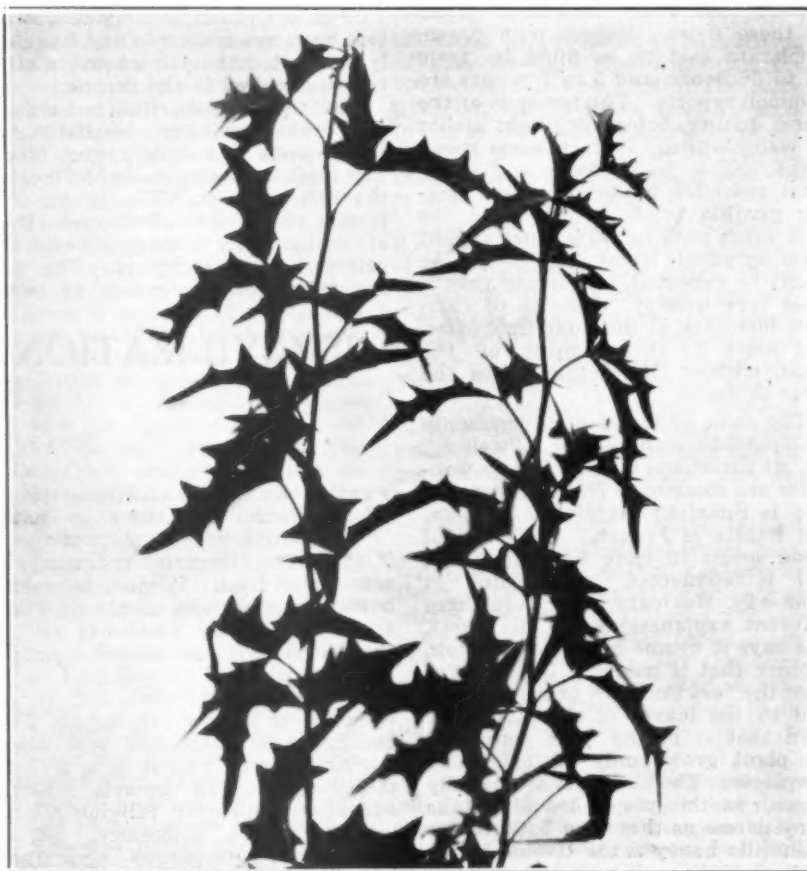
nectar producer. The honey from this plant is said to be light amber and of good flavor. The flowers of the plant are extremely fragrant and the

honey is said to possess the same odor.

Differing from the most of the chaparral plants, agarita does not seem to be influenced by rainfall. It has one prolonged blooming season, early in the spring, and very seldom does it bloom again during that year. Occasionally a few blossoms may be seen very late in a winter following a wet fall. This plant also seems to have reached the limit of its territory and does not seem to be on the increase within these limits. It is, however, easy to grow from seedlings or by transplanting. It lends itself very readily to landscape gardening and can be trimmed into a most beautiful hedge. As it is an evergreen, it has a double advantage as an ornamental. One of its peculiarities, which is sometimes detrimental to the producer of bulk comb honey, is that when the ripe berries fall from the bush the bees collect the pink juice from the berries and store it. This happens to such an extent that large pink spots appear on a beautiful white sheet of comb.

**GUAJILLO (*Pithecolobium brevifolium*, Benth).**

This plant seems to be a remnant of the past. It occurs only on the dry stony ridges of southwest Texas and the adjacent parts of Mexico. Its range even here is very limited and it seems to be decreasing in area, due to heavy pasturing and cultivation. It is extremely hard to grow from seed and equally hard to transplant.



Agarita.

The plant has a graceful, almost fern-like appearance. It reaches a height of from 6 inches to 10 feet. Its stems come from a stumpy root stalk. As the older stems die or are killed by cattle or fire, they are replaced by new shoots from the root stalk. Guajillo must partake somewhat of the nature of its relatives, the clovers and alfalfas, as it is a favorite food of range cattle, deer, rabbits and even wood-rats. As the plant remains green the whole year, it becomes very important as a range plant during the drought of summer and in very early spring. When wood-rats and rabbits are plentiful, the honey crop is materially reduced by these rodents barking the bushes in the winter.

The plant has long, slender stems, bearing few branches, mostly on one side. It has a few curved thorns, showing its relationship to the cats-claw. The blooms are heads about one-half inch in diameter, of small creamy white flowers, which are extremely rich in nectar. The fruit is a broad, flat pod containing five or six light brown beans. Shortly after the beans harden the pod splits and the beans fall out. The split pods hang on the branches one and sometimes two years. These old pods give the bushes a very peculiar appearance and one which helps the stranger to identify the plant.

Guajillo is very dependable as a honey plant. Its blooming period ranges from March 15 to May 15. The flow is heavy and often prolonged. Beekeepers from the guajillo country tell some wonderful stories of these flows. Supers with drawn comb are said to be filled in from 24 to 36 hours, and 5 to 7 supers are common reports. The honey is of the finest quality, being very light amber to water white. In fact, some specimens are a milky white and somewhat resemble fireweed honey, making guajillo comb honey ideal for bulk comb packing. It is much sought after by people liking mild honey. As might be expected, this honey granulates very quickly. Species of cats-claw blooming at the same time often add much to the quantity of the yield, without detracting from the color or flavor.

The name of the plant is commonly pronounced phonetically, "wahea," but all variations from wahea to wahgiller are common. The spelling guajillo is Spanish; juajillo is Mexican, and hujilla is French. The original name seems to have been aguajillo, and is connected with water in some way. Mexicans have given three different explanations for the name. One says it means a little water jug, another that it means a little water, from the fact that dew or rain is long held by the leaves of the plant; the third that it means little water, as the plant grows only on extremely dry places. The botanists are equally at sea, as this plant has almost as many names as there are botanists.

Guajillo honey is the Uvalde honey of commerce, as it was first shipped from that city; however, at present,

many other towns in Texas ship many tons of it.

#### MESQUITE (*Prosopis glandulosa*, Torr.)

Differing from the preceding plants, mesquite is a plant in its racial youth. It is rapidly increasing in numbers and yearly occupying new territory. The first explorers found a few of these trees along the gulf coast and gave the native name the Spanish spelling of "mezquiz." Its beans formed a part of the native diet, but as these trees were far apart, mezquizez, as the explorers called the beans, were a luxury. Prairie fires must have been responsible for the fewness of these trees, for when the fires ceased, the trees came, as in the memory of men now living, the vast extent of Texas now covered with mesquite trees was an open prairie. This tree is found westward to California and was introduced into the Hawaiian Islands, in 1828, where it is called "algarroba," and is the best honey plant on the islands. It has even been suggested, because of its aggressive habits, that this plant is not a native but an introduced species, the seed having been brought here from the South by the earliest explorers.

The tree grows in a similar manner to an unpruned peach tree, which it so closely resembles that one town in Texas has the name of Peach Orchard, because it is said, the Northern real estate dealers made this mistake. A story is told in Central Texas of a horticulturist, from an outside state, who gave a peach pruning demonstration on a mesquite tree and had nearly completed the job when his attention was called to the thorns.

The wood of the tree is hard and red brown, making excellent firewood, posts and even paving blocks. The leaflets closely resemble those of the honey locust. The bloom is in tassels of many small flowers. These are white when first opened and turn yellow before dropping. The pods are long, containing ten to twelve

beans. These pods never open and transportation by water and animals is the mode of dispersion. As they contain a high per cent of sugar and the beans are rich in proteids, during years when mesquite pods are plentiful the cattle do extremely well. The seeds grow very easily. The young sprouts are armed with long, straight thorns.

The mesquite is very susceptible to moisture changes. Its regular blooming period is from May 15 to July 1. If, however, rain comes, the blooming ceases, the tree puts on new branch growth, and the honey flow may end entirely unless weather conditions induce a second blooming. It is a common observation that there may have been a mesquite bloom, but unless there are pods there was no honey flow.

Mesquite is not a reliable honey plant, as there are so many factors governing its nectar flows. In 1914, 1918 and 1921 there were heavy flows, but in the years between there was little or no flow. The ideal conditions seem to be plenty of moisture up to April and then dry, hot weather until the flow is over. When moisture and heat conditions are right it is no uncommon thing to see 5 or 6 sets of different-aged beans on the same tree. Trees standing alone, especially those in yards or roads, bloom almost every year, while those in the chaparral do not.

The honey is light amber, well flavored, and granulates rapidly. The flow comes on rapidly and is very heavy. Surplus up to 200 pounds on individual colonies is recorded. Mesquite and horsemint are rivals for the first place in honey production. When mesquite yields, it is far ahead, but when it fails, horsemint holds first place. As with alfalfa, a species of thrips often reduces the mesquite flow. While the heavy flows are restricted to central and southwest Texas, its rapid spread gives hope of increasing yields from this excellent honey plant.

## IS CIVILIZATION POSSIBLE WITHOUT BEES?

By George W. Williams

THE basis of all civilization is agriculture. No tribe or nation can climb very high in the scale if it has to migrate frequently to search for food. It must be permanently located, with plenty of wholesome food easily obtained, so that the individuals can attain a surplus of necessities. This will lead to the expansion of industries, and to the establishing of manufacturing. Then commerce is established with neighboring nations; and it is a well established fact that the arts, sciences, education, and even religion all follow the lines of commerce. So, the nation with prosperous agriculture, manufacturing, and an active commerce, will rise rapidly in the march

of civilization.

But as agriculture is the foundation of civilization, so soil fertility is the basis of successful agriculture. If this is not maintained, the crops fail and the people go hungry. They lose their physical and mental energy and they lose the surplus that is required in commerce. They fail in their efforts, and give way to stronger tribes, or migrate to more suitable locations.

From the foregoing, it is obvious that if civilization is to be permanent in any given location, it must be supported by soil fertility. As the grains are the principal plants that are grown for food, and all of them, without a single exception, are soil-fertility-reducing plants, it can readily be



seen that if no means are taken to maintain the fertility, in the course of time the soil will become barren and the crops will fail.

It is easy to see that, if the people are to be fed, the soil must be fed. It must have the fertility elements returned. The principal element is nitrogen. This can only be returned by manures, by overflowing rivers, by allowing the land to lie fallow and giving sufficient time for the nitrates to be deposited in the surface soil and by planting legumes whose root nodules foster the nitrogen-gathering bacteria. Of these four methods, the last is the most economical, and to the ancient peoples the only one that could be used, except, of course, the local overflows of rivers.

As I have noted, the grains are the principal food plants. They are also the chief nitrogen consuming plants. In addition, they are self-pollinating. They will grow and mature in any place where the soil and climate are suitable. As soon as they consume the nitrogen in the soil they will cease to produce grain.

To the legumes, the clovers, especially, comes the task of renewing the nitrogen content of the soil. Their roots bear the nodules that sustain the bacteria that separate nitrogen from the air, and leave it in the soil for the coming grain crop.

All legumes are limited in their maturity in a very peculiar manner. They cannot mature seed without the aid of insects to complete the pollination of the flower.

The family *Apidae* has 19 groups or genera. The distinguishing feature of each genus is the trait of feeding the young on pollen, either alone or mixed with honey. Of these 19 different genera, most are small in size, or not numerous in the community. The carpenter bees, while grouping together, have only a few individuals. The same is true of the mason bees. The sweat bees and many others, are mere pygmies, and are few in the nest. It is only our common field "bumblebee," and the hive bee that are strong enough physically or numerous enough in the community to be able to accomplish any amount of work pollinating the plants; and it is only *Apis* that are numerous enough for any extensive pollinating.

This leaves our hive bee the most important insect of all for this purpose.

The thing that I want to bring to attention is the fact that civilization, either ancient or modern, has never developed beyond a rudimentary stage wherever there has been a lack of bees to pollinate the legumes and thus maintain soil fertility. On the other hand, wherever bees have been present, civilization has developed.

We will look to history, and we find that ancient civilization climaxed in Egypt, Babylon and the adjoining lands, in China, and nowhere else. Classic civilization came to its climax in the Tuscan culture, the Greek learning, and Roman efficiency. We fondly believe that modern civiliza-

tion will climax on the shores of England, where the clover furnishes sustenance for the fat bees that furnish the juicy roast beef that feeds the hearty Briton, and on the broad, fertile fields of America that has plenty for us and much to spare to others.

You may search the pages of history, and you will find that this is a universal truth. It is a wonder to me that it has never before been commented on. It is of the utmost importance to those who have the affairs of the world in their hands to know about these things. It is of the utmost interest to beekeepers to have the value of the bee realized.

Red clover is not to be depended on in the broad and already failing wheat fields of the northwest, nor in the cotton and tobacco fields of the south. Nor is it a very satisfactory crop in the corn belt, as our hive bee cannot reach its nectaries. Unless some Burbank can develop a short tube in this clover, it will have to give place to some variety that our common hive bee can reach, or the civilization of the world will be limited to the supply of food that can be

produced on a decreasing soil fertility.

It is more than likely that sweet clover (*Melilotus alba*), in some of its varieties, will give us the answer to this international problem. If so, the beekeepers will incidentally enjoy a great prosperity. But it must be some legume that the honeybee can pollinate; it must be a plant that will flourish on the wheat fields of the northwest as well as the cotton fields of the south, and the corn fields of the west. When we analyze these requirements, we feel more than ever inclined to believe that sweet clover will be the plant of the future to restore the nitrogen to our fields.

And the beemen have the matter largely in their own hands. It is not merely a matter of profit to us as a class; it is really a matter of international welfare. It is a matter of a higher civilization. If we can be of material aid in securing greater soil fertility we will benefit the world as much as if we help make laws, or govern States. I would like to hear that beekeepers all over the United States are spreading the propaganda of bees, legumes, especially sweet clover, and a better civilization.

Indiana.

## MAKING INCREASE

By F. Dundas Todd

A YEAR or more ago Allan Latham devised a new method of introducing a queen that had much to recommend it. I used it in the season of 1921 with great success and made preparations for more extensive application, as I anticipated very considerable increase in 1922.

Let me recapitulate the procedure he recommends. To prevent the starting of queen cells on the removal of the old queen, he cages her in the hive when he introduces the young one, and protects the candy hole by butting it up against the cage containing the old queen. Knowing that their queen is present, the bees usually make no effort to start queen cells, in fact only once in my experience with 30 queens was the attempt made. At the end of two or three days he disposes of the old queen and permits the bees to free the young one, and she proceeds to lay at once, as she has been cared for by the bees in the colony. In one hive, through an oversight, I left the queens caged for ten days, but the plan worked all right. In most instances I found the attendant bees all dead, but the young queen was always in good condition.

In my own yard this season I was up against a new factor, which was to do the work in two hours between trains. On one occasion I had thirteen queens with which to make increase and I began to wonder if I could find that number of queens in two hours and do all the necessary work besides. I figure that when I find six queens an hour I am doing pretty good work, so I was up against

a problem. Reduced to plain terms, I had to make increase without the labor of finding the queens, and at the same time retain Allan Latham's efficiency in preventing the starting of queen cells. Also I wanted the two queens in the hive at the same time, but the old queen must not have access to the young queen's cage, and the bees must not be able to free the young queen until the old queen was removed from the hive.

I decided to make two stories of the hive, separating these with an excluder, leaving the old queen in the lower one, and placing the cage with the young queen in the one above. That would prevent the old queen endeavoring to get at the young one. To hinder the bees in their attempt to eat the candy I selected a 1-inch roofing nail, because it has a large head, and pushed it through the paper into the cavity, and that part was taken care of.

From each brood chamber I took out three combs of sealed brood, making sure the old queen was not on them, replacing them with empty combs, then on top I placed a queen excluder, next an empty brood chamber, into which were put the three combs of sealed brood, and a sufficient number of empty combs to fill up; last of all the cage with the young queen.

Four days later I lifted each hive off its stand, set down a new bottom board in its place, placing on it the top story with young queen, and withdrew the nail from the candy hole. I found the paper had all been removed, and the candy eaten as far as



the bees' tongues could reach. The cover was replaced on each hive, and the old one carried to a new stand. A week later I found the young queens laying.

I easily did all the work in the time at my disposal, and the method is apparently just as certain as Allan Latham's—it really is a simple varia-

tion of his—and is surer than the ordinary system of removing the old queen when the young one is introduced. Furthermore, there is practically no break in egg-laying, as the young queens are of full size at the end of four days, having been fed by the bees of the colony.

6 are the ones which furnished Mr. Campbell with so many colonies to stock a yard. The bees did so well in the trees that it convinced him that packed hives would be the thing for his location. The rotten wood sur-

## GLIMPSES OF ARIZONA BEEKEEPING

**T**HE pictures shown are from George M. Campbell, of Flagstaff, Ariz. Much of Arizona is unsuited to beekeeping, although in a few favorable locations very large crops of honey are harvested. The region about Flagstaff is at a high altitude and has a delightful climate. There is some splendid pine timber and much wild country. Figure 1 shows an apiary at the foot of a mountain. The elevation here is 7,900 feet above sea level and the Rocky Mountain bee plant or cleome is the principal source of honey. The apiary shown in this picture is composed of 46 colonies of wild bees captured from trees in the region near by. The fact that so many wild bees are to be found indicates that it is a very good

location. At times in winter the hives are covered with snow to a depth of 6 feet.

Figure 2 shows two swarms being transferred from one tree. The opening was 60 feet above ground. Eighty pounds of honey and 16 frames of comb were taken from the tree. More than 100 bee trees have been cut with the axe shown in the picture.

The big pine trees shown at Figure

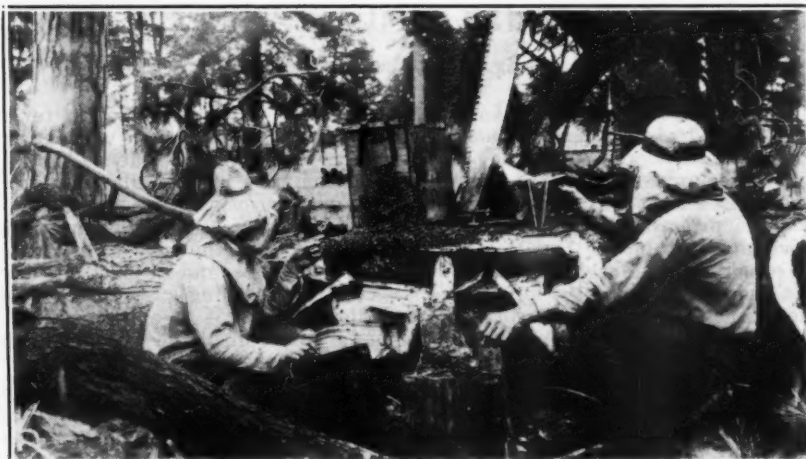


Fig. 2. Two swarms transferred from one hollow tree.

location. At times in winter the hives are covered with snow to a depth of 6 feet.

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Figure 3 shows a field of Rocky Mountain Bee Plant near one of Mr. Campbell's apiaries. He states that it makes very good hay when cut at the right time and placed in stacks. Under the climatic conditions of Arizona it is a wonderful source of nectar, the drops showing plainly in the flowers. The chickens like the seed, so that altogether cleome is a useful plant to Arizona folks.

In the picture shown at Figure 4 will be seen a hive which produced more than 200 pounds of comb honey



Fig. 3.—Rocky Mountain bee plant in bloom.

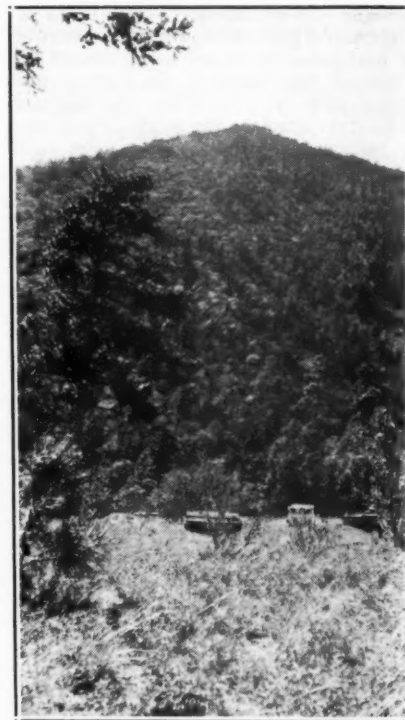


Fig. 1. Apiary started with wild bees caught on the mountain.

rounding the bees inside the hollow trees furnished good insulation against cold.

Snow remains the year around in some of the canyons shown on the high mountain behind the trees and in places is thought to be as much as thirty feet deep.

### EVOLUTION

Just now there is much discussion about evolution appearing in the press, even in bee magazines. Judging from the nature of many of these articles, the writers have no intelli-

gent idea of what advanced scientists really consider as evolution. All the talk about man being descended from a monkey is foolish. No colleges are teaching that kind of nonsense.

That man has advanced from the lower orders of life and is growing constantly more intelligent is very evident. The progress is true of all the animals, and Haeckel and others have shown from facts that the germs of all animals, man included, are similar in the first stages of embryonic life, that there is a constant advance from the lowest to the highest. But the changes have taken place so slowly that descriptions of the nature and surroundings of the first man are mere speculation.

It is very evident that the work of creation is constantly going on, that new forms of life are constantly appearing and that existing forms are constantly changing. It is only necessary to mention the new breeds of chickens, new varieties of fruit, new creations of flowers, to show how these changes take place in slow progressive forms. The bantam and the Brahma chickens are so different in characteristics as to have

taries of the flowers and the pollen in their anthers.

Your new hive must have taught you already, if you did not know it, that it is in the cells of the combs that these two precious substances are deposited. Honey is the food of the adult bees and pollen is the basis of the pap which they feed to their young. The cells, which are intended to receive the eggs laid by the mother, later are the cradles and later still the store rooms.

It is with their tongue or broom (*balai*) that the honey is gathered from the flowers. To transport it to the hive, the bee must swallow it; by contracting her stomach she can at will bring it back to her mouth and disgorge it wherever she pleases, through her proboscis. I advise you to try to see this with your own eyes, remembering that I see nothing with mine, and you will be kind enough to tell me what you will have seen. Take note of your observations for this purpose, it will probably not be for you an unpleasant task and it may be useful to you.

Let us come now to the pollen. They called it formerly the dust of



Fig. 4. 200 pounds of chunk comb honey from one colony gathered from Rocky Mountain Bee Plant.

the stamens; since its most marvelous use has been known, it is designated by the name of fecundating dust.

Conceive, my dear child, that these almost microscopic grains, with which the anthers, that is to say the top of the stamens, are filled, are the life-giving principle of the entire vegetable kingdom. Whether this little box, with which you are acquainted, opens spontaneously at its maturity and becomes the toy of the winds, or whether it is accidentally carried and deposited, by some insect, upon the pistils, it penetrates them and reaches the germs or the eggs, its touch is sufficient to fertilize them, that is to say to render them capable of repro-



Fig. 5. Arizona apiary at the foot of a mountain.

little in common, yet probably both have the same ancestry.

When such violent changes are known to take place within the life of a human being, how is it possible to estimate the changes in the millions of years that have passed?

There are plenty of facts to support the theory of evolution, and it is no more a theory than the Dzierzon theory of parthenogenesis, which is now so well established. Yet probably men will never know the exact facts of evolution.

### THE HUBER LETTERS

#### Harvest of Pollen and Honey

(Continued from August)

June 15, 1829.

Dear Eliza:

Treasures were bestowed upon our bees, my dear girl; the honey which they find ready-made in the nec-



Fig. 6. In the pine timber at the foot of San Francisco Mountain many bee trees were found.



duction. Without pollen, no fruits.

I do not ask you to excuse these long details, you realize their interest.

But you will want to know how the bees secure the fecundating dust to make with it the food for their young. This question also attracted the attention of the naturalists; I had the same curiosity, but neither Reaumur nor your friend have completely solved it, to my mind. The speed of the motions of the worker, when she is busy with this harvest, does not permit to distinguish them clearly, but you must judge of this for yourself; I do not give up the hope that your young eyes may be more successful than ours in seeing the little details which may have escaped us.

#### Gathering Pollen

Approach, then, a plant in full bloom that may have around it some bees whose attention has been also drawn by it. You will first see some that want the honey and that, more or less buried within the calyx of the blossom, seek for it in its nectaries. These are not the ones that you must watch; see rather, among those workers that fly above the flower without apparently touching it, whether there is one which makes extraordinary motions in the air. You will notice that it is the six legs which are moving below its body. You will understand, as your elders did, that this bee must have begun by opening the anther with its mandibles and removing that which interests her, and as the anther contains only pollen and as you see some of this pollen in the little triangular basket of the legs of the third pair, simple common sense will inform you that the mandibles of the bee have given what they took to the first pair of legs, that this pair, after having packed and brought it together, transmitted it to the second pair and that the little ball, evidently increased, finally reaches the basket; from there it is transported to the cell, where you have found it yourself. You will notice that there is something here to guess; it is not exactly as I stated it that the thing happens, but by holding to it, we are not very far from the truth.

(Note.—In the *Revue Internationale*, 1894, pages 103-20, we find an article of Pierre Bois, entitled "New Theory on the Formation of Pollen Balls," which also appeared in the *British Bee Journal*. This lengthy and well studied article cannot be reproduced here. But its author makes a statement of facts which we believe correct. He writes: "When the bee is on the wing, from one blossom to another, if she holds her posterior legs close together, she is gathering pollen; otherwise the posterior legs are far apart, and then it is equally certain that she is not harvesting pollen." He also states that which we well know, that "Any pollen harvested by the bee receives an addition of saliva, outside of the hive, before being made into balls." Those who have fed flour to bees, in early spring, have readily noticed the change of flavor and increased sweetness of the

little pellets, when detached from the pollen baskets.—Translator).

That which we have best seen is the care which the bees take to arrange these pellets of pollen in the cells which are to serve as store rooms. For that purpose they must back into the cell, empty their pollen baskets, and press with their feet the pellets against one another, to cause a greater number to be packed in the least possible space; it does not appear that those cells are ever sealed. (Except when the bees complete the filling of them with honey.—Editor.)

When it is a question of existence or conservation, no precaution appears useless or too minute. Nothing in this respect has been neglected in what concerns the bees; to bring home in safety the honey and the pollen which they have just harvested is therefore an important matter, for their life depends upon it. You wish to know how they manage to run no risk: the too thin honey may not be held within the open canal of the proboscis, it would leak out and be lost on the way, and its odor, attracting the numerous insects that are fond of it, it would not fail to be robbed away after having caused dangerous fights; to transport it to the hive without losing any of it, the bees can do no better than hide it away within their stomach and empty it promptly within the cell which is intended as a store-room. You know that a simple contraction of the honey-sack is sufficient to cause the honey to return to the mouth and secure its disgorgement.

You have surely learned before this that it is only after the bee has swallowed the honey and disgorged it that we can eat it ourselves, and I trust this will not disgust you with it. The young larvæ are subject to the

same law, pollen is used by them only after it has been eaten by the nurses and has undergone in their stomach (1) a modification or elaboration which converts it into a jelly and makes of it a pap appropriate to their requirements. It is by an analogous operation that the food of the females of larger animals is changed to milk within the mother's breast.

1 (Many of the present microscopists now ascribe the production of the early larval food, or royal jelly, fed to the larvæ during the first three days of their larval life, to the first pair of salivary glands, located in the head of the worker. For this question, we refer the student to Cheshire's "Bees and Beekeeping," or to the "Hive and Honey Bee" of Langstroth-Dadant.—Translator).

The differences which Mr. Reaumur has observed in the flavor of this pap, during the few days when the larvæ have to feed upon it, indicate undoubtedly that some substances unknown to us have been mixed with it to proportionate the food with the age and the changing needs of the larva; this improvement is best perceived when one compares the flatness of the pap during the first days, with the much more pungent flavor which it acquires at the end of its distribution. Would not these changes in the flavor of the pap be rather the effect of a fermentation caused by the warmth of the hive, than the mixture of foreign substances with it? That which would cause me to believe it is that these changes take place in winter when the queen begins her laying, at a time when the bees can bring nothing home from the outside.

The proofs of this in the next mail.  
(To be continued).

## HONEY PRODUCTION IN EGYPT

### Notes on Bees and Beekeeping in the Orient

By Ph. J. Baldensperger

JUST back from the Orient. I appreciate your criticism as to my lack of care in writing the names of the places, which compels you to look them up. But if you knew how differently these names are spelled and pronounced in the country itself by people of different countries: The English say Jeroosalem, the French Jerusalem, the Germans Yerousalem, the Arabs ElKondes, and the Jews Yerou-Shalaim. Take your choice. It is the same for every spot: Jordan, Jourdain, Yordan, Irdun, etc. As I jabber a little in all four of the languages, I am not very often short; but I still hear incomprehensible languages, for the Orient uses the Turkish, Greek, Hebrew, Armenian, Yiddish, etc., as there is great disorder, since Balfour promised Palestine to the Jews. It is a mixture of swarms, in which it was necessary to use a peace "smoker," and I succeeded fully. I was charmingly treated wherever I made it known that I

was an investigating beekeeper, and they called me a "bee dervish," and furnished me a guide and an auto for part of my trip.

I had bad luck at Suez. My trunk containing travel curios and photos, was detained at the custom house, and I do not know when I will get it.

I hope you received my previous letter. I visited many apiaries and met lots of friends. I traveled through the desert to the Suez Canal and came to Cairo, where naturally the Egyptian bee was my principal subject of enquiry. One of the friends of my childhood, Capt. A. Hanauer, introduced me to Sami-Bey, Sub-director of the Entomological section of the Ministry of Agriculture, and to Dr. Gough, the Director. This learned gentleman has made quite a special study of bees and showed me beautiful drawings of Egyptian and Palestine bees.

You know that the Palestine bee is a shade darker than the Cyprian, its



fuzz is thicker and grey—still the bee is of a decidedly yellow tint. Well, the Egyptian bee is an item smaller, somewhat more greyish and a little bit cross. The director of the Government apiary, which I visited with Dr. Gough and Sami-Bey, in the khedivial gardens at Ghiseh, on the left bank of the Nile. Mr. Halbany, a very intelligent beekeeper, showed us the apiary, consisting of some 60 hives. The hives are built single-walled, but stand the heat well. They never have combs breaking down from the heat, and I consider it a superfluous expense to build them in double walls as did the Jewish settlers of Palestine. On the Riviera and in the Alps we never use double-walled hives and have never suffered from either the heat or the cold, which in the Alps is certainly greater than the cold in the highest points of the mountains of Judea.

The apiary in Ghiseh, in the gardens outside of Cairo, is in a lovely spot, the immense river Nile, not far away, and the plain down to the Pyramids all green, mostly with "bar-seem," the Arab's name for red clover. Unluckily, it is cut before it blooms and used for fodder for the numerous donkeys, horses and camels used in Cairo, the Capital of Egypt, which now numbers over 800,000 inhabitants.

The bees get their honey mainly from the broad bean (*Faba vulgaris*), in early spring for the development of the swarms, and from numerous other shrubs and plants, not to forget the cotton.

The Egyptians keep their bees in long tubular cylinder hives, about 4½ feet in length and often not over 8 inches in diameter. These cylindrical hives are made of the alluvion soil of the Nile, in which straw is mixed; the dough—so to speak—is rolled out in big flat cakes, till the whole has attained the required dimensions; the ends of the cake are now gathered on the wooden roller, which is as thick as the hollow of the proposed hive; the ends are stuck together and rolled fast, till the cylinder is perfect and no end seen. The wooden cylinder is now pulled out, and the hive left to dry in the hot Egyptian sun.

The Egyptian "Nahal" or beekeeper whom I had met some 30 years ago, was gathered to his fathers, in a tomb where his ancestors had been laid, at the village near the Pyramids, where he rests as snugly as did King Kephren or Kheops, who had one of the grandest monuments known, to cover their remains.

Ehmad, this beekeeper, during his life time, had taken his cylinder colonies on camel back to the Nile, there put the hives on a boat and gone up and down the river in quest of food, with as much satisfaction as the Pharaoh who led his people to war, ages ago. Ehmad had a very cute way of ascertaining whether his bees were gathering honey. He marked the boat at the level of the water, at the time of departure, and as honey gradually came in, the mark gradually

sank, telling him that the weight of the hives was increasing. Ehmad was also pretty well versed on a way to control swarming; by opening the two ends of his cylinders, he could see the projecting queen cells and cut them away. Being in very close quarters, the bees here are very much inclined to swarm, and Mr. Halbany told me that they swarm three or four times in spring. Mr. H. does not like the Egyptian bees; he is trying to Cyprianize them by fresh importations from Cyprus. He says the Egyptians will not produce over 6 frames of brood, and mentions them as very slow to develop. The frames they use in the Royal gardens measure 34 centimeters by 20 (13.6 inches by 8), inside; very easy to handle, but, alas! not overloaded with honey; there was almost no propolis about the frames, which is usually one of the features of all south and west Mediterranean apiaries. Very likely the want of propolis-producing plants is the cause of this. I am going to try their bees, for through the kindness of these gentlemen of the Ministry of Agriculture, I came to France with a hive of Egyptian bees furnished by them. They are now flying and trying our Riviera flora, and we will see what they can do here. A few Egyptian drones also pulled through the journey, in spite of a pretty tempest across the Ionian and Tyrrhenian Seas. The bees don't seem very cross to handle, at least just now. The top of the crescent on their corslet is quite visible, while

the ends are grayish dark and almost disappear.

Hornets are the great calamity all over the Orient, and all the beekeepers over there complained of these pests, one of the Egyptian plagues quite forgotten by the lawmaker of old. In Egypt Dr. Gough had had no experience with our bee diseases, except a slight attack of May disease—your paralysis.

The small native hives yield an average of 6 to 8 pounds of honey, which is a net income, as they have practically no expenses and no labor except the gathering of the swarms and the collection of the honey. European or American beekeepers, with their expensive hives, could not live on so tiny a revenue, but they would certainly increase it many times.

Nice, June, 1922.

(Mr. Baldensperger's interesting remarks concerning the names of countries, cities, rivers, etc., varying in different languages, are very well taken. Greater differences still exist in our so-called civilized countries. For instance, "Deutschland" is called "Germany" here and "Allemagne" in France; and I remember how astounded I was when I learned that what I was taught to call "La Manche" was the "English Channel," and "La Tamise" the "Thames." So each country has names all its own, which are "Greek" to other nations. We are sure Mr. Baldensperger's interesting descriptions are appreciated by our readers.—Editor.)

## COMMISSION SALES OF HONEY

By John T. Bartlett

A sales stimulator used for many years by photographers is the coupon-and-solicitor plan. The solicitor sells coupons for \$1 or some other figure, going house to house. This coupon is worth its face value on an attractive price offer. Going house to house soliciting photo orders at regular prices, a solicitor would find his a heart-breaking task. With the coupon offer, experienced men sometimes do a tremendous amount of business. The coupon serves two purposes.

First. It induces a solicitor to sell a product or service he probably could not otherwise be persuaded to. It is a practical way of obtaining solicitors.

Second. It makes easier the task of selling to the consumer.

At a time when honey producers the country over are considering practical merchandising plans, the common method, as having possibilities especially for sale of honey on an extensive scale in fairly large cities, direct to the consumer, deserves consideration. This method has been used the past year by the Foster Honey & Mercantile Co., of Boulder, in the city of Denver, selling "Rocky Mountain" brand honey. The Foster Company, the head of which is Wesley Foster, well known through-

out the honey industry of the country, are the largest producers of honey in Colorado.

The coupons used were printed and supplied the solicitor in books of 100. Each coupon was worth 20 cents. The solicitor sold it for that sum to the housewife, and pocketed the whole amount. The housewife, in turn, delivering the coupon, got 20c credit on honey offered at special prices.

The coupon was attractively printed on blue stock, of liberal size (4¼ x 7 inches) and had the words "Worth 20 Cents" prominently displayed on the front. The wording ran:

Pure—Delicious

Light Colored Rocky Mountain Honey  
Mild Flavored

Loop Market Honey Shop  
At the Tramway Loop, on Fifteenth  
and Lawrence Streets.

"With this coupon you get the special low price as shown here. This coupon is worth 20 cents on purchase price.

"See your saving! Special advertising offer on fine table honey from the largest producers of honey in Colorado."

The scale of prices given included a ten-pound pail, offered at the special price of \$1.70, with the explanation, "Our regular price is \$1.95—usually sells for \$2.10; a five-pound

pail at 90 cents, with the explanation, "Our regular price is \$1—usually sells for \$1.15"; a thirty-six-pound can at \$6, and a 60-pound can at \$8.50.

The coupon continued:

"Note comparison between the special advertising prices and regular prices.

"This coupon is worth 20 cents on the special prices given above.

"These offers good for 30 days only"

"This coupon enables you to buy honey at wholesale prices. We will deliver your order to your door, C. O. D. for 10 cents additional charge, although we suggest that you save by stopping at the Loop Market Honey Shop. We do not deliver outside of Denver."

There was a blank for a serial number at the foot, and a second blank for the solicitor's signature.

The reverse side contained blank lines for the customer's name and address. There was also a concise resume of the qualities of honey as a food, headed "Eat Honey and Keep Well," and "Honey Cook Book Sent Free with Order if Requested." The writer personally was impressed with the skill in condensation shown, and believes other beekeepers will be interested in the snappy "selling talk."

"Honey contains Vitamines, which are so essential to your health."

"Nearly all physicians advocate people eating more honey in the place

cakes fresh. Honey does not spoil. You can keep it indefinitely. Honey will prevent or help cure a cold.

"There are many other good qualities about honey. Send in your coupon for a can of Rocky Mountain Brand Table Honey, the very best the bees can bring you, and we are convinced you will be well pleased."

The Loop Market Honey Shop, mentioned on the coupon, was opened by the Foster Company a number of months ago in the Loop Market, within which floor space is leased to a large variety of concerns. Getting solicitors, the company inserted small advertisements at intervals in the "Help Wanted" classification of local newspapers. These set forth the statement that solicitors could make excellent earnings selling Rocky Mountain Brand Honey on a coupon basis. Interested ones were told to call at the Honey Shop daily, within certain hours. During these hours the salesman of the Foster Company covering the retail trade of Denver was present, and explained the proposition to applicants, "selling" to them on it in many cases. This representative had supervision of the house-to-house sales.

Of course, many that took a book of coupons and started out, did little or no work. Some had fair luck. Some did exceptionally well. The experience of all concerns using solicitors is that many who do not make good must be tried out in the process

starts out he has 100 coupons, say, each worth 20c to him, if he can persuade housewives to buy them; and psychologically that fact has a notable effect. It gives him far greater confidence in his proposition. While the basis of employment is really strictly commission, he does not react to it as he does ordinarily to a commission proposition.

Coupons also help solicitors to sell in this respect—a great many housewives will read them. The solicitor not especially gifted as a talker, can get the coupon into the housewife's hand. Reading it, she will sell herself. Any coupon used by a honey producer should take this condition into account, and purposely be worded to persuade. The quoted Foster Company coupon is good.

Colorado.

### THE SIBERIAN YELLOW-FLOW-ERED ALFALFA

A Good Honey and Forage Plant Suitable for Conditions in the Dry Belt of the Interior of British Columbia

By W. J. Sheppard

As the purple-flowered alfalfa yields but little honey in British Columbia, except when it is irrigated, the Siberian yellow-flowered variety (*Medicago falcata*) would appear to be more valuable from the beekeepers' point of view, judging by reports that have lately been received respecting it.

A beekeeper writing from Alberta states that he purchased a five-pound package of bees with a queen last year, and from June 1 they built up into a strong colony and stored 70 pounds of honey from this source. He further states that this is a dry land alfalfa and that it will grow on any soil and bloom from early in July until killing frosts come along.

The original seed of this variety was gathered from plants growing wild in Siberia in the vicinity of Semipalatinsk, Siberia, a prairie district with from 7 to 9 inches annual precipitation, and a range of temperature from over 100 degrees in summer, with drought conditions, to 50 to 60 degrees below zero in winter, with very little snow. It will grow as far north as the Arctic Circle, where the subsoil remains permanently frozen. One of the secrets of the hardiness of this variety apparently is the very low set crown, which is from 3 to 5 inches below the surface. The crown is very broad, sometimes 12 inches and more across, with as many as 250 to 300 shoots.

It is stated that this variety is eminently suitable for a dry climate, and like all other legumes which store up nitrogen in the soil, elaborated by the nodules on the roots, it is a good soil builder. When pastured by cattle, horses or sheep, it cannot be damaged, as the low set crown is out of reach and cannot be eaten out. While not making much top growth the first season, when it is making

WORTH		PURE-DELICIOUS		WORTH	
20		Light Colored—ROCKY MOUNTAIN HONEY—Mild Flavored		20	
CENTS		<b>LOOP MARKET HONEY SHOP</b>		CENTS	
		At the Tramway Loop, on Fifteenth and Lawrence Streets			
		DENVER, COLORADO			
WITH THIS COUPON YOU GET THE SPECIAL LOW PRICE AS SHOWN HERE. THIS COUPON IS WORTH 20 CENTS ON PURCHASE PRICE.		TEN POUND PAIL.....\$1.70	○ OUR REGULAR PRICE \$1.95	SEE YOUR SAVING! SPECIAL ADVERTISING OFFER ON FINE TABLE HONEY FROM THE LARGEST PRODUCERS OF HONEY IN COLORADO	
		FIVE POUND PAIL..... .90	○ OUR REGULAR PRICE \$1.00		
		THIRTY-SIX POUND CAN. 8.00	○ THESE ARE SPECIAL		
		SIXTY POUND CAN.....\$8.50	○ WHOLESALE PRICES		
		NOTE COMPARISON BETWEEN THE SPECIAL ADVERTISING PRICES AND REGULAR PRICES THIS COUPON IS WORTH TWENTY CENTS ON THE SPECIAL PRICES GIVEN ABOVE THESE OFFERS GOOD FOR THIRTY DAYS ONLY			
This Coupon enables you to buy Honey at wholesale prices. We will deliver your order to your door C. O. D. for ten cents additional charge, altho we suggest that you save by stopping at the Loop Market Honey Shop. We do not deliver outside of Denver.					
No. ....		(OVER)		Solicitor.....	

of sugar.

"Honey is rich in food value. One pound of honey will furnish 42 per cent of the energy (about 1470 calories) required by a man for a day's work, and 21 per cent of the iron needed for his system.

"Use honey as a spread on bread, toast, muffins, hot biscuits, waffles, pancakes, etc. If you prefer it thinner, like a regular syrup, add some warm water. Use honey instead of so much butter, for it is much cheaper. What child does not prefer honey?

"Your baking keeps better when prepared with honey. Honey conserves the moisture and keeps your

of finding the few who are hard workers and adapted to house-to-house selling. However, when the selling is on a strictly commission basis, the concern is at little loss if a solicitor fails. In fact, calculating the value of having the concern's name and business advertised to a small or large number of housewives, there is no loss at all.

Therein, to the writer's idea, is one of the outstanding merits of the coupon plan. Where most employers or solicitors are compelled to offer a guaranteed sum in order to get workers to start, this coupon method gets workers who are not guaranteed even a very small sum. When the solicitor



mostly root growth the second season and after bring forth a growth of surprising merit.

The following record kept of a 3-acre crop in Alberta shows its possibilities very clearly. Seeded in the spring of 1914 in rows 30 inches apart. Made a poor showing that season. In 1915 a growth of over two tons per acre was produced. It withstood the winter of 1915-16 without the loss of a single plant. In 1916 used as a pasture from first signs of growth in spring until snow. In addition to pasturing eleven head of stock it yielded two tons of hay in the middle of July. Seasons of 1917-18-19, the field was used for hay, over two tons per acre being secured, and afterwards used for pasture, affording excellent feed until late fall. Seasons of 1920-21 crops of about 200 pounds per acre of hulled seed were produced.

The following rate of seeding is advised:

Rows 24 to 30 inches apart, 2 to 3 pounds per acre.

Rows 12 to 18 inches apart, 3 to 4 pounds per acre.

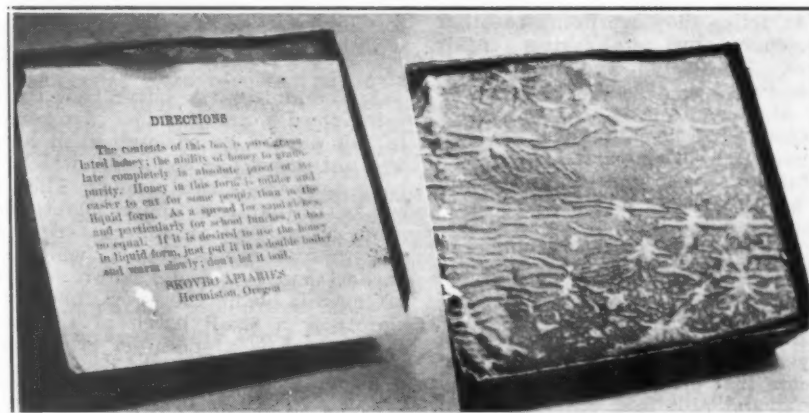
Broadcast, 5 to 6 pounds per acre.

If this alfalfa once became permanently established in British Columbia and distributed over as wide an area as is the white Dutch clover in some districts, it would be a very valuable addition to the honey plants of this Province, and mean much larger returns for the beekeepers. Seed costs about \$1.75 per pound.

Nelson, B. C.

#### FONDANT BEST BEE FEED

Any feeding of bees in winter should be with soft candy or fondant rather than with syrup, as it is easier to feed, is more economical and keeps



Skovbo's package of granulated honey, with cover removed.

down, moisture in the hive. A good formula:

Granulated sugar, 12 pounds; liquid glucose, 1½ pounds; water, 1¼ quarts; cream of tartar, ¼ teaspoon. Heat the water and stir in sugar slowly until dissolved. Add the glucose; boil and then add cream of tartar. Remove and stir until thick enough to pour into molds.—County Agent E. R. Jackson, The Dalles, Ore. (March American Farming.)

There is no need of glucose in the making of a fondant, and the less glucose is given to the bees the better, for glucose contains a large amount of dead matter which is very injurious to the bees, in winter, as it loads their intestines at a time when they cannot discharge the contents of their abdomen at will. A fondant, or as we call it, sugar candy, may be made very readily without glucose, just as our daughters usually make what is commonly called "fudge." It is good for winter, if we have neg-

lected to supply the bees with liquid food before the cold weather opens. We have often wintered bees in the cellar, by laying over the combs a piece of this sugar candy.

#### GRANULATED HONEY IN PASTEBOARD

As you have had several notes recently in the American Bee Journal on the subject of granulated honey, I am sending you one of the boxes of granulated honey we put on the market last year, thinking that it might be of interest to you. We are retailing most of our honey on the Portland public market, and at first started to cut the honey up into bricks, wrapping these up in wax paper; we did not like this plan, and so last year we had these wax-coated boxes made, and put up about 8,000 of them. We have been retailing them at 25 cents, which is cheaper than a 1-pound jar of honey can be sold at, and of course it is cheaper than a section of honey; but they have not been selling quite as well as we had hoped; it will take time to introduce them; we aim to turn out a like number of them again this season.

The honey should not be eaten out of the box; break the box away from the honey, and drop this on a plate, and I think you will find that it will look quite attractive on the table.

J. Skovbo,

Hermiston, Ore.

(We had the box photographed and show it herewith. It is the best extracted honey economical package that we have ever seen. The only trouble is that it should be all sold before warm weather causes the honey to soften. But when the public is educated to use it, it will lessen the cost of extracted honey in a positive manner.—Editor.)

#### HONEY PRICES

By J. Skovbo

Again the season for marketing honey has arrived, and the beekeepers are making the usual scramble to catch the few buyers who are in the market at this early time, and to sell at any price obtainable the product they have labored a whole year to



Outside of Skovbo package of granulated honey.



produce. Few consider what it has cost them to produce the crop; fewer the injustice they are doing to other beekeepers by establishing unfair prices. The only thing that counts seems to be to dispose of the honey crop at once. Verily the poet spoke the truth when he said that a fool and his honey are soon parted.

This year there appears to be even less need than ever of starting honey-selling panics. During the past season, a year long to be remembered because of financial and business depressions, a normal crop was disposed of, and in addition, also, large stocks of old honey left over from the year before. Reports at this time indicate that practically no old honey is left, and also that only a normal crop is in sight. During the war time many people became used to eating honey, and also to paying for it. In the Honey Producers' League we now have a medium for united action, and if there ever was a time when commercial beekeepers could unite in demanding and hope to obtain living wages and fair returns on investments, that time is now; but these conditions will never come unless beekeepers themselves demand it. Will the time ever come when a certain price will be established for a certain grade of honey, and any person who undertakes to dispose of honey below such price be classified as "unfair" and "scab," like organized labor now does?

A certain western State that likes to be known as the principal honey-producing State in the Union, is generally recognized as the chief offender in price cutting. In fact, because it is one of the largest exporters of honey, consuming only a small percentage of its crop at home, it is usually in a position to dictate prices to other States. At this time this State is offering its choicest honey at  $8\frac{1}{2}$  to  $9\frac{1}{2}$  cents per pound f. o. b. boats at seaports, and with other grades in proportion. What will this net the producers? Considering the increase in cost of equipment, labor and transportation, this brings honey actually below pre war prices. Once such prices are established and accepted in other localities beedom will have lost the opportunity to elevate the honey-producing business to a paying position that war conditions created. Nor, would we blame these brethren if they were really able to make money at such prices. Of course some men with exceptional abilities may do it, but in most cases it is doubtful. In nearly every honey-producing locality we find beekeepers that left California because they could not make a living at the business there, and in most cases these men are making good in the new location.

What's the matter with California? Oregon.

#### ILLINOIS NOTES By Dr. J. E. Aigley

My bees came through the winter in a 100 per cent condition and never in my limited experience have I seen

them build up faster than they have this spring. At present (May 27) the hives are literally overflowing with bees, but have had no swarms so far.

I account for the latter that I am using the Dadant Modified hive; once in ten days I go through each hive and cut out all queen cells, which I have done twice this spring. Then I see to it that they have plenty of room by putting on supers early. I put on first supers May 7, which is earlier than I ever did before. Just after fruit bloom they got some forage from a small patch of Chinese rape, which is a volunteer crop, and is still in full bloom. The bees are on it whenever the weather permits. I have no knowledge as to the quality of honey it produces, but judging from the color of the combs made from it, it would be quite yellow. But for an early blossom and at least two crops or more in a season, it is not surpassed as a means to build up and to fill the gaps when nothing is coming in. I shall try and get permission of some farmers to sow some in their cornfields just before the last plowing. It will make a fine fall crop, as it bloomed until after frost last fall.

I have a small patch of early blooming sweet clover which has been in bloom since May 15, while the ordinary kind is probably three weeks or more from blooming. I think the three, the early blooming, the ordinary and the Hubam, make a fine combination for bees, if we could only induce the farmers to sow them.

At present white clover is beginning to bloom and from the copious rains we have had all spring, and from present indications, there should be a fine honey crop in this section.

I wonder if you could give me some information on the drone problem. I use full sheets of foundation in frames well wired, not only horizontally but vertically, and yet I seem to have a great many drones. In some combs that seem to be perfect in all other respects, there I find a patch of drone comb right in the center of the comb, as large as the palm of my hand. All around it is worker comb. Why? Surely the comb did not stretch there and nowhere else.

I can see why there would be drone comb at the top and sides and at the lower corners, but I cannot see why there should be drone cells in the center of the comb, unless the bees deliberately tore down the worker cells and built drone cells because they wanted to rear drones.

I presume that those patches will always be drone cells unless I cut them out and put in worker comb or foundation.

Illinois.

(Occasionally bees build drone cells on worker foundation, disregarding entirely the shape of the cell bases. These are exceptional instances. The only remedy is to destroy such combs and replace them. —Editor.)

#### Grapes From Spain

News received by the Department of Commerce is to the effect that Spanish growers expect to ship 500,000 barrels of grapes to the United States this year. They also expect to ship to Great Britain more than a million barrels.

### BEEKEEPERS BY THE WAY



A. H. E. Wood.

#### Beekeeper Who Supports Science

A. H. E. Wood, of Glassel, Aberdeenshire, Scotland, has become widely known because of his interest in the scientific study of his favorite pursuit. Mr. Wood is not only interested in getting a good crop of honey from his bees, but he wants to know more about them. When the Isle of Wight disease became serious in Great Britain a number of scientists began investigations which were continued intermittently. Mr. Wood gave the financial support necessary to supplement the funds available from the university to enable Doctor Rennie and his associates, Bruce White and Miss Harvey, to continue investigations which led to the discovery of the mite now believed to be the cause of this destructive disease.

In appreciation of Mr. Wood's support Doctor Rennie named the newly-discovered mite *Tarsonemus woodi*. Had success not crowned the efforts of these scientists the world probably would never have known of the service rendered by Mr. Wood in making the investigation possible. As it is, the beekeepers of the world recognize their debt to him, as well as to those who made the discovery.

## PRODUCE MARKET NOTES

### Odds and Ends of Information of Interest to the Beekeeper

The following items have been gleaned from current market reports in order to give the beekeepers an idea of the quantity of produce which American markets can absorb. When we consider the small quantity of honey which is produced and also the fact that it is not perishable but can be carried over for an indefinite period, it is surprising that there is so much difficulty in disposing of the crop. The real trouble seems to lie in the fact that there is not a sufficient supply available to interest the usual marketing agencies in handling it. There is no reason why the public should be more interested in oranges than in honey, yet California growers ship thousands of carloads of oranges to New York City and secure a nice profit after paying the high freight rates necessary to carry them across the continent, together with the selling charges which are bound to be heavy in such long-range operations.

The man who studies the market carefully and is best informed concerning all conditions which are likely to affect the sale of his product is the one in best position to get the most money for his crop.

The American Bee Journal believes that the price of oranges, peaches, cantaloupes and other fruits have an effect on the markets for honey and for that reason we frequently publish short notes about such products as are attracting attention in the market. Markets that will absorb 2440 carloads of melons in one week should readily absorb two or three times the present output of honey if it is properly advertised. Inferior products composed of corn syrup and sugar are selling freely at higher prices at retail than is asked for honey. Let's wake up.

#### Bigger Bean Crop

It is stated that there are more than 300,000 acres more beans this year than last. New York, Michigan, California, Colorado, New Mexico and Arizona are the big bean-growing states. In California large crops of honey are gathered in the bean fields.

#### Cantaloupes Go to Market

On one day during the last week in July there were 40 cars of Arizona cantaloupes, 13 cars from California and 2 from Arkansas. This indicates that cantaloupe honey will shortly be going to market from other sections besides the Imperial Valley of California. Several of the southeastern states are growing melons on a commercial scale, also 2,444 cars went to market altogether in one week this summer.

#### California Pears

The Chicago Packer of recent date states that pears have been shipped from the river district of California at the rate of about 100 carloads daily the last week in July. In addition

large quantities were going to the canneries.

#### Peaches Selling Well

On Monday, July 24, 84 carloads of peaches were reported as having been sold in New York City alone, with 69 cars sold on Tuesday. Although heavy shipments of peaches have reached the northern markets, up to the time this is written prices have held up well and the demand seems sufficient to take them all. By the time the September Journal reaches our readers the later crop will be on and prices may fall.

#### Oranges Bring Good Prices

During the last week of July 79 carloads of California Valencia oranges were sold at auction in New York. The best fruit sold at from \$9.50 to \$12.50 per box. When it is remembered that the retailers' profit was still to be added, we find that the New Yorkers are quite willing to pay fancy prices for extra quality fruit.

#### Raspberry Growers Do Well

Reports from Michigan are to the effect that the red raspberries brought \$4.25 to \$4.75 per crate at the close of the season, while blacks sold at \$3 at the end.

#### A Big Cherry Crop

Michigan reports one of the biggest cherry crops in her history, the past season. Canners were anxious to contract on a basis of about 7 cents per pound early, and many growers contracted at this rate. Later it dropped to 6 cents per pound. Both canners and growers were surprised at the market in some localities.

#### High Freight Rates Reduce Acreage of Watermelons

Reports from Arkansas are to the effect that one-third less watermelons were grown this year than last, because of the high freight rates.

#### Cold Storage for Berries

From Kansas City comes the news that after several years of experimental work, the Missouri Valley Cold Storage has been able to keep berries in a fresh state for an indefinite period. In 1917 ten crates of berries were carried through the summer and used in winter, retaining their fresh color and flavor. Since that time the quantity stored has been increased each year, until now 10,000 crates of frozen berries are carried.

This new enterprise is a boon to berry growers, since it makes it possible to carry over the surplus at times when the market is flooded. While the berries are not adapted to selling in the usual channels when removed from the storage, they are consumed by bakers for pies, etc. After storage the berries must be used at once on removal.

#### STOPPING SWARMS

I enjoy the Journal very much. In May issue, "Public Errors on Bees." A small boy had been eating green apples; he went to his mamma crying with pain in his stomach. "Why," she said, "Run and play, for you only imagine it is pain; forget it." "But, Mamma. I've got inside information;

I know it." Well, that is how I stand about pounding on pans to stop a swarm. I have done it several times to swarms going by—"with no intention to stop," right here in the vineyard, where there was not anything to cluster on. Theoretically, I know I am wrong. Practically, it works. Geo. B. Stephen.

California.

## FALL FLOW ON LONG ISLAND

By E. M. Barteau

We are in the midst of the indigo flow. I am writing to say it is a dandy. Colonies are boiling, bees dropping all over when weather is a little cool towards evening. Hives are 10-frame; most of them have been given the third full depth super with 9 frames, since this flow started.

When the bees fill two supers practically solid and are storing in the third and not a cell sealed, looks like some flow to me.

Honey is white, beautiful sections, with almost snow-white cappings.

There are several acres of indigo surrounding my little yard of 50 colonies. An abundance of bees are working it, although the great mass of bees go a longer distance to the burnt-over woodland.

Very little pollen is gathered from it; an occasional bee has a small pellet, light brown in color.

I regret not to have a hive on scales this year, but think the flow equals the one of two years ago, when the scale hive gained 157 pounds in 17 days.

Last year the indigo failed to bloom, because of a long, severe drought.

I believe it is the most important nectar-producing plant in this locality; perhaps our proximity to the seashore and resulting humidity is the great factor.

We have several varieties of goldenrod, but only two worth anything. One variety grows on the meadows (marsh land); flowers grow in panicle form and larger blossoms than the other goldenrods. The other is an upland variety growing about knee high, usually with a curved stem reminding one of a fern. The flowers are more of a raceme than panicle. This one has a greenish, fuzzy stem, blooming through September until frost, and both varieties are heavy yielders.

You may know that my colonies are in condition for work, with 45 colonies being run for extracted honey only two have swarmed.

New York.

## Tennessee Beekeeping

The Tennessee Department of Agriculture has recently issued a bulletin of 32 pages entitled "Beekeeping in Tennessee." It outlines successful methods which are adapted to Tennessee conditions, and also contains several contributions on special subjects by various persons. Copies can be secured from the Department of Agriculture at Nashville.





Stopping robbing with a wet spray from a hose.

### TO STOP ROBBING

A bad case of robbing is not easy to stop, and prevention is far better than cure. When it has started the beekeeper must make the best of it and stop it as soon as he can. The picture herewith shows a novel and effective method of control. George W. Capwell, of Cottonwood Falls, Kans., sends us the picture and reports that he uses a hose with fine spray which is turned on the colony being robbed, and continued until the robbers are thoroughly drenched and robbing stopped. He has found this method successful many times. September is often the worst month for robbing, especially when heavy frosts are followed by warm weather.

### EMBEDDING FRAME-WIRES ELECTRICALLY

By George Gilbert

The rapid spread of electrical apparatus throughout the country, in connection with radio, the automobile, farm lighting, etc., makes it possible for very many more beekeepers than formerly to use electricity for embedding wires in the foundation of brood and extracting frames.

The work can be done rapidly, surely and without leaving a trace of odor on the foundation.

Most of us have a storage battery, a few dry cells or access to regular current that can be "stepped down" with a transformer such as are sold to operate toy railroads for children or for use in various parts of radio sets.

For the ordinary Hoffman size shallow extractor frame about 6 to 10 volts are needed, or the output of three cells of storage battery of the

usual size for automobile work. Or about four cells of dry-cell will do, or a transformer that will take 6 to 10 volts off the regular electric light or power wires, or the lighting circuit of a farm plant.

The connection is made at either end of the wire in the frame, assuming that the wire is all in one piece, as it should be. Lay the ends of the

wires on the tacks that hold the wire, as they make good connectors. Have the foundation already in place, resting on the wires. At the contact the little tinned wire will heat up quickly. Its mere weight will make the wire cut into the wax, and if left on too long it will cut the wax clear through. But as soon as it begins to melt, break the connection. The wire will at once cool and if you have hit upon the right length of contact, the wires will be embedded firmly and accurately. Not a mark of a cell base will be marred.

This method has been in use for many years, but many people think it something requiring expertness in handling electric current. It does not. With so many people now having current available from so many sources, it is time more use was made of this way of fastening in foundation. For large brood frames, at least 10 volts will be needed to heat the wire; the extractor frames will do with less. Too long a contact will melt both wires and wax. So be careful.

New York.

### HUGE CEMENT BEEHIVE ADVERTISES HONEY

By Chas. A. Byers

Shown in the accompanying illustration is the novel advertisement of honey that a Los Angeles, Calif., retail concern presents on vacant space at one side of its store, on one of the city's business streets. The advertisement is in the nature of a huge beehive, constructed of cement-stucco over a wood frame and wire mesh, inside of which, and accessible by means of a small hinged door on the front, is kept the stock. The beehive is about 6 feet high by more than 5 feet in diameter.



Mammoth skep for advertising honey



## THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

### Honey Production

1. What are the three leading countries in the production of honey in their order of production? If the United States does not happen to be one of these, where does the U. S. rank?

2. We notice from the 1919 report that the U. S. exported nearly \$2,000,000 worth of honey. Where does she export this to, mainly?

3. Is honey sold on the market more in the comb form than in the liquid form? Or vice versa?

4. What are the main uses of honey?

NEW YORK.

Answers.—1. We have no data, concerning the comparative production of honey in different countries. Even in our own country, the statistics secured from the census are unreliable, since the records do not show honey production within the limits of incorporated cities and villages, and we have good reason to suspect that over one-third of the entire crop is harvested from hives located in those unreported locations. However, if you wish our private opinion, we will say that probably the West India Islands and Chili produce the greatest amount of honey per square mile. California would be next, followed by Colorado, Texas, Utah, New York, Michigan, etc. As a country, it is quite probable that the United States is away ahead of any other land in the total production. Madagascar, some parts of Africa, and Central Europe are also good producers.

2. The exports of the United States are mainly to Great Britain, Canada, Italy and other European countries.

3. Most of the honey sold was in comb, but it is changing fast to the extracted or liquid shape, though most of the extracted honey granulates or candies in cold weather.

4. It is mainly consumed at the table, just as preserves, jellies and jams are eaten. It is used considerably to make gingerbread and cakes, some use it in making candies, and for other cooking purposes, and it may be made into mead and vinegar. Mead was thought to be the drink of the gods in mythological days.

### Disease—Price of Bees

Will you please tell me if my bees are likely to contract foulbrood from a neighbor's bees which are one-half mile away? I can buy full colonies in 10-frame hives with tested queen at \$12.50. Is that not reasonable, considering the price of nuclei and pound packages? I am only waiting to find if it is safe to get them, on account of the nearness of disease.

MISSOURI.

Answer.—Yes, there is possibility of getting foulbrood even at a greater distance than half a mile. The thing for you to do is to get your neighbor to treat his bees and cure them. The danger of contamination lies in the bees robbing hives that have died of foulbrood, as the honey usually contains the spores of the disease.

If the colonies you wish to purchase are Italian bees in movable-frame hives, the price you mention is reasonable.

### Eggs in Queen Cells—Requeening

1. I wish to know which lays the eggs in the queen cells, the queen, or workers?

2. My bees are gnawing at the entrance of their hives, although the regular entrance at the bottom is fully open. Why is this?

3. When is the best time to requeen, in the spring, or fall?

CALIFORNIA.

Answers.—1. The queen rarely lays eggs in the queen cells, although men of authority like

Huber state that she does lay eggs in queen cells when they are only rudimentary and of such shape that she does not realize that she is laying eggs that may become rival queens. Usually the bees widen the cells containing such young larvae as they wish to rear into queens. It is a very interesting observation to see them in the observatory hive cut down the cells around each larva intended to be reared into a queen, and enlarge her cell and feed her extra food. Any larva that would produce a worker, if reared in the common way, may be reared into a queen by being supplied with more ample room and a plentiful supply of jelly.

2. It is possible that they want a larger opening. Or there may be some rough spots in the wood about the entrance and they are trying to polish it. Or they may be only placing propolis there. Your guess next.

3. That depends upon the locality. In this vicinity, we prefer to replace queens in July-August, between the spring and fall honey yields.

### Ants—Winter Loss

1. Kindly tell me the cause of ants getting in my beehives when on a platform about 2 feet high. I have stopped them by putting crude oil in pans around the legs of the stands.

2. Also, why my bees died in one hive last winter; it was a Hoffman 10-frame hive, full of honey; it was a strong colony of bees; they had about 2 inches of opening in the front, and hives on either side got over the winter O. K. All the hives were covered in good condition. Have lost two other colonies, but they were late swarms and had not enough feed, and I did not get to see them in time to feed them.

PENNSYLVANIA.

Answers.—1. If the ants get into strong colonies of bees, you will readily notice that they do not get where the bees can reach them. They go there and often make nests there because it is a warm, dry spot, usually finding some place right over the brood nest. Your method of keeping them out is good. Of course, they would occupy empty hives for a similar reason.

2. I don't know. I can only suggest that perhaps the queen died at the beginning of winter and the cluster remained less compact afterwards than it would otherwise have been. This is only a guess. I have known strong colonies to die, because the entrance was too deep and mice would get in and disturb the bees. There may be other causes. The death of the queen does not always cause the bees to scatter, but they certainly make a less compact cluster when they are queenless.

### Freak Swarming

I have a hive of bees with a tested queen. The bees weigh about 1½ pounds, and one afternoon in March they came out of the hive like ants, and in a few minutes they were all out, also the queen. They flew around the house and everywhere for about ten minutes, and finally they gathered back in the hive. I had several that did the same thing and didn't come back. What do you think is the cause?

TEXAS.

Answer.—In your case, we must discard the question of natural swarming, for, although bees might swarm naturally in March at the latitude of Houston, yet a colony of bees of only 1½ pounds would have no cause for natural swarming. But there are a number of causes which may impel bees to leave the hive.

One of the causes may be the wedding flight of a young queen. Your bees may have reared a young queen, unknown to you, and when she went out on her wedding flight they flew out also. Usually in such a case they do not come back at all, and that is what we call a "run-away swarm," for they rarely alight, and are impossible to stop. If this was not the case, then they might have left because short of honey. It is not a very sensible way for them to act, but we have often known them to desert the hive in that way. That is what we call a "starving swarm." They have even been known to do this when the scarcity of pollen prevented them from rearing brood. In a case of this kind, a comb of pollen given them satisfies them. In any case, a small deserting swarm may be made to remain peaceably at home by giving it a comb or brood, honey and pollen from some strong colony.

### Number of Beekeepers

I have often been asked the question "How many commercial beekeepers are there in the United States? What percentage produce comb honey, extracted and chunk honey?" Thinking that perhaps you are in a position to know, I am in turn asking you. Also, where the largest number are located, by states?

NEW YORK.

Answer.—There is no way to find out the number of commercial beekeepers in the United States. The Government Survey, which is taken every ten years, does not enlighten us, as it takes only the number of apiaries on farms and leaves out entirely the apiaries in the limits of incorporated cities and villages. There are many commercial apiarists living in suburbs of cities and villages.

As to the greatest number of commercial beekeepers in any one state, I believe all will agree that California hold the record, with perhaps Texas or New York second.

### Saving Foundation and Honey

1. I have 10 hive bodies with full sheets of foundation, that I did not get filled up with bees this summer. How can I keep these hives with this foundation over winter? Will the wax-moth destroy these frames of foundation if I don't fumigate them?

2. I understand they use carbon bisulphide for fumigating. How does this preparation come, in liquid, or powder form? And where could I purchase it?

3. I united a couple of weak colonies the other day. The hives that were left after uniting, contained some sealed honey, some uncapped, and some oee-bread. Could I keep these hives over winter for next year's swarms, with the honey that was not capped?

WISCONSIN.

Answers.—1. Those hives with foundation will be perfectly safe if you keep the mice away. There is no danger for foundation from moths, as moths have to have mainly old combs to live from. It is only where there are a great many moths breeding that there is danger of them in foundation. If your hives have no old combs in them, you need not be afraid.

2. Carbon bisulphide, or caroon disulphide, is a colorless liquid, which evaporates quickly, with heavy gas. It is inflammable and would explode if a light is brought near. It may be had of any druggist. We pread it upon a cloth, over the combs, and close up the hive tight. It kills all living insects. But it will not probably kill the eggs, so you must use it two or three times, several weeks apart. From one-fourth to one-eighth ounce per cubic foot is used.

3. You may keep the honey you mention by fumigating it and putting it away where it will not be exposed. If it is kept in a dry place it will not be likely to ferment and will be all right to give to the bees in spring if they need it.

### Stored Pollen

I am sending you a sample of what I found in one of my hives.  
Can you tell me if it is one of those dreaded bee diseases?

Answer.—Your fears in this matter are evidence of the necessity of becoming acquainted with the appearance of foulbrood, in order not to be unduly annoyed and disquieted by entirely innocuous conditions.

What you sent me is just a piece of comb containing pollen (or bee-bread as it is commonly called), with some honey on top of it. This is gathered from the flowers, being the fecundating dust of blossoms; it is used to make the food for the brood. Foulbrood does not have any such looks. The larvae die in the cells and rot or dry there. Get a textbook or send to the Bureau of Entomology for bulletins describing foulbrood. They have several of them.

### Net Weight on Sections

Will you be so kind as to tell me if the weight of each section of comb honey must be stamped. As I sell my comb honey only in 24-pound cases, not at retail, is it not sufficient to stamp only the case weight? I think the retail dealer has clerks enough to stamp or weigh each section, an apiarist has already much work in preparing the combs for market. There are already too many useless laws, which don't diminish the cost of living. Why not stamp eggs, oranges, lemons, apples, etc.?

CALIFORNIA.

Answer.—The United States Federal Pure Food Law requires that cases containing comb honey should be marked with the net weight of the honey and that the honey should be sorted so as to mark on each section the minimum weight of each section contained in the case. You may get a copy of the exact wording of the law by writing to the Bureau of Chemistry, Department of Agriculture, Washington, D. C.

The minimum weight to be marked upon the sections is that of the net weight of the honey, which is one ounce less than the weight including the wood. The reason of this regulation is that at one time the sections were sold as containing a pound, when the fact is that more sections contain less than 14 ounces than above that weight. The intention is to protect the consuming public. It will pay you to so mark your honey, if you depend upon wholesale markets.

You understand that it is not necessary to mark each section separately with its exact weight, but to mark it with the minimum weight of each section contained in the case, marking the total net weight on the outside of the case. It is some trouble, but it increases the value of the honey, as it saves the grocer from possible trouble, and the honey thus marked will sell readily anywhere.

### Color of Italians

Please describe color of Italian bees. Should the true golden workers be black tipped, or should they be golden all over, with no black at all? Is the color of the leather-colored the same as the golden, except that they are darker, or are they banded?

NEBRASKA.

Answer.—There are no bees golden all over. All of them have more or less of a dark rim on the outer edge of the rings of the abdomen.

The leather-colored Italians have the three rings next to the thorax of a leather color, while the ordinary Italians have those rings of different shades of yellow. Usually the bees of a hive are uniform in markings, except the queen and drones, who usually vary some.

Gentleness is one of the most marked characteristics of the Italian bees, as well as quietness on the combs when the hive is handled.

### Uniting

Which is the best way to unite two colonies of bees? And is it practicable? ARIZONA.

Answer.—I believe the best way is the Dr. Miller way. Kill the poorer of the two queens; feed both colonies so they will not be suffering or cross in disposition; then at night remove the weaker of the two colonies from its stand and place its brood chamber over the other brood chamber, with just a sheet of paper between the two. United bees often fight; but this will come as near a successful reunion as it is possible to make. Perhaps the feeding of the two colonies with some scented sweetened water would have a tendency to give them a similar hive odor. But the main thing is to avoid all tendencies to robbing, because it is when the bees are afraid of robbers that they are inclined to fight. A stranger who comes to us with gifts is welcome, but a beggar never finds a very pleasant reception anywhere.

### Equipment—Disease

1. I have 15 colonies of bees from which I will get about one-half ton of sweet clover honey in extracting frames. I wish to keep about 25 colonies every year. I have an extractor now, but nothing more. What other equipment will I need?

2. I have six bodies of combs with American foulbrood and some neighbors have some which they would like pressed. Would it pay to get a wax press?

3. After boiling frames with American foulbrood in pure water for one hour, will they be all right to use again.

ILLINOIS.

Answers.—1. You need not only an extractor, but also some sort of capping can, over which to uncup the combs. We began with a big dishpan, 54 years ago, but soon found out that it was necessary to have something large enough to drain a day's cappings, and also a honey knife. The Bingham is the best. Of course, you should have a hive-tool, a smoker, a veil, and some robber cloths to cover the supers as you carry them back and forth. We also have some flat tin pans just large enough to support the supers. Very little else is needed, except honey containers. However, it is a very good plan to use bee escapes, as it saves work. But it is not indispensable to have them.

2. If you expect to render combs regularly every year, and if American foulbrood is in your vicinity, it will be worth while to do your own rendering, as this avoids spreading disease. So you might as well get a wax press.

3. Yes, if you boil anything that has contained foulbrood in clear water for an hour, it will kill the germs. It is very important to be careful, especially to have no robbing of such combs or giving any of them to healthy colonies.

### Size of Sections

I am about to buy comb-honey equipment; the heavy flow on Cape Cod, where I keep my bees, coming in August and September, from Clethra and salt water goldenrod.

I wish to have but one kind of hive body and sections and wish to begin with the kind best suited to my needs.

On page 11 of your catalog I find that you state: "We urge the use of the  $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$  style sections." Now I had about made up my mind that the No. 4 super, for  $4 \times 5 \times 1\frac{1}{2}$  plain sections listed on page 13 was the best for my needs, as two  $5\frac{1}{2}$  shallow extracting frames can be used on the sides as baits, while it will also hold four more sections than the No. 1, and as I see my bees but once a week, on week ends, the No. 4 would give more room per super, with the further advantage that it may be used with frames as a half depth.

Before deciding I will be greatly obliged to you if you will kindly write the reasons why the No. 1 super should be used in preference to the No. 4.

MASSACHUSETTS.

Answer.—The only argument in favor of the  $4\frac{1}{4}$  sections over the  $4 \times 5$  is stated in the catalog: "Nearly all extensive comb-honey producers use this size of sections . . . and many honey dealers will not buy honey unless in this style of sections."

I may say in addition, that the fixtures for other sizes of sections are not so readily available. For instance, we had an enquiry the other day for pasteboard boxes for packing sections, such as Mr. Crane recommends, page 256 of the June number. We could not supply them because the manufacturers of those boxes do not find enough demand for them to bother with making them. Besides, if you happen to be in a hurry for sections, you can get the  $4\frac{1}{4}$  almost anywhere, while the dealers often do not handle the  $4 \times 5$ .

Outside of these reasons, there is no objection to the  $4 \times 5$  sections, and if you produce only a small quantity of honey to sell locally, they will be as satisfactory to you as the others.

### Queenless Bees

1. I have a colony of bees that has been queenless so long that the worker bees have begun to lay; and now they have the hive and super full of drone brood. We have sent for a queen. How would you introduce this queen to the queenless bees?

2. I have been thinking of taking the frames with drone brood away, and shaking the bees in front of a hive with only foundation. Or would it be better to shake them in a box without any foundation and leave them combless for a day or so? This colony is strong with bees yet.

3. How would it do to take two or three frames of other bees that have a queen and put these queenless bees with them?

MINNESOTA.

Answers.—1. A queen received by mail is usually killed by a colony having drone-laying workers.

2. I do not believe depriving them of combs would stop the laying workers in their desire to lay eggs.

3. That would be the best way. We have always succeeded in doing away with drone-laying workers by introducing in their hive a laying queen fresh from some other hive where she has been laying plentifully. So if you take a queen with a comb of brood and bees and place it right in the center of your drone-laying colony, caging the queen for 2 or 3 days, you will be likely to succeed. You can at the same time replace this queen by putting the new queen purchased in her place. The reason why we succeed with a queen from the apiary when we would fail with a queen received by mail is that the queen from our own apiary is in good laying condition, while the queen that has traveled is less ready to lay.

In any case, unless the drone-laying colony is still very strong, it is hardly worth saving, and it generally pays best to unite it with some other hive.

### Swarms

If one's bees swarm and he does not want increase, can he not put them right back in the hive from which they came and give them more room?

WISCONSIN.

Answer.—Putting the swarm back will not cure the swarming fever. At least it never did so in our case. But if you wait four or five days, till the young queen has hatched, there will probably be a fight between the two queens, one of them will be killed and the colony may not swarm again, especially if you have given it room and ventilation additional. The returning of secondary swarms, within 24 to 48 hours almost always ends the swarming impulse.

The queen, of course, is hived with the swarm and returned with the swarm. If you kill her or keep her away, and return the swarm immediately, one of the young queens will go out with a swarm as soon as possible, unless the weather is unfavorable.

When bees contract what is commonly called



"the swarming fever," they will swarm whether you try to prevent them or not. I have divided a colony that had made preparations for swarming into 3 divisions, with the result that each of those divisions cast a swarm, when the first cell hatched.

### Bees in Philippines

I began with bees last March by purchasing 10 full colonies of Italian bees. They cast 18 swarms during April and May, but owing to uniting I have but 22 colonies now.

I expect to return to the Philippine Islands, where I have lived for nearly 20 years, and desire to take my bees with me.

1. Would it be practical to take them just as they are in the brood chamber? The trip would require them to be confined about one month.

2. What would you suggest as the most practical way to get started in the bee business by one going from here to the Philippines? During my residence in the Islands I never saw or heard of anyone who kept bees there, although I saw many swarms go flying by and ate some splendid honey made by wild bees of two kinds, a regular honeybee, and a very large almost black bee, which make their home underneath a large branch of a large tree or under a cliff in the rocks.

3. Do you know of any reason why beekeeping would be impractical or is not indulged in in the Philippines?

### CALIFORNIA.

Answers.—1. If I were to transport bees to the Philippine Islands or to any far-away spot by boat, I should try to do it at the time when they had the least brood. I would screen the hives so they had plenty of ventilation and I should also try to keep them, during the trip, in as dark and as well ventilated a spot as possible, so they might have all the air they needed, sufficient good honey, and no water unless they had brood, in which case it might be well to give them a little. But water is likely to induce brood rearing, and the less they do of it the better.

2 and 3. As I know nothing of the Philippines, it would be a mistake for me to answer these questions in a positive way. In fact, we need some information on beekeeping in the Philippines. If any one can furnish it, it would be welcome in these columns. We see no reason whatever why bees could not do well there. From your description, we think the large bee of the Philippines must be *Apis dorsata*, similar to that of India.

### Introducing Queens

I ordered an Italian queen, introduced her upon arrival according to the directions on cover of cage, inserting cage between two frames for the bees to release. Three days afterwards I found most of the yellow Italian bees that were sent with the queen, dead in front of the hive. I did not find the queen among them, but wondered if they would sting the bees and spare her. Would like to know if the bees are usually stung, or if this was an unusual case. Am anxious to know what the probable fate of the queen is.

### OHIO.

Answer.—The bees of the hive may welcome the queen and kill her attendants. I have often noticed that if I put a queen with bees in a cage without food, into a hive, the bees of the hive will feed the queen, even if they have a queen of their own, but will rarely or perhaps never feed the workers. I doubt whether they would feed their own workers that were in a cage, much less strange workers.

In your case, it is quite probable that the queen was accepted. However, the man who would answer positively in the affirmative would indicate by his answer that he did not have a very extensive experience in the introduction of queens. We never know whether a queen has been safely introduced until we examine to see whether she is laying. We must then be very careful not to do this carelessly, as the least robbing might cause a danger to the life of the new queen, who might be treated as a

robber, even 4 or 5 days after a safe introduction.

### Dead Brood

In requeening some bees today, I found a colony with about half the brood dead in the cells; the cells were uncapped and brood would come out easily, with very little help. I believe lots of it would shake out. Mixed with this was lots of emerging brood. Brood that was capped seemed to be all right. Some cells have dead pupae coiled in bottom of cells, very small, uncapped, that seem to be dead. There is no smell or ropiness. Colony was an early swarm in 8-frame hives, and very strong.

### ILLINOIS.

Answer.—This looks like a case of sacbrood. The most positive evidence of sacbrood is the fact that the brood that dies and dries up may be shaken out of the cells, which is not so in either European or American diseases.

If the colony is sufficiently strong to be worth saving, I would advise you to cage the queen for ten or twelve days, or until all the brood is capped. If the bees clean out the dead brood, it will probably end the trouble. Then you might give them a comb of healthy brood from some strong colony to help them out.

In any case, I would advise that you send a piece of comb containing the disease to Dr. E. F. Phillips, at the Bureau of Entomology at Washington, D. C., to diagnose the disease, for in these brood troubles we cannot be too careful.

### Fermenting Honey

I had to carry over 12 or 14 cwt. of honey; some of it seems to be working; it candied last winter. Some of it is all right and some of the containers have a lot of bubbles. I had some in 60-pound cans; when I unscrew the cap it works out. The question is, what can I do with it? Will warming it up help, or will I have to lose it?

### NEW YORK.

Answer.—Your honey fermented either because it was extracted before it was ripe, or because you kept it in too moist a spot. When honey is well ripened and kept in a very dry room, there is little danger of its acquiring any moisture. That which you had in 60-pound cans evidently was not sufficiently ripe when put up.

You can improve it considerably by heating it in open vessels; provided you do not heat it to more than about 160 degrees F. It will foam considerably when heated, and the gasses which it contains will evaporate. It may then lose a good part of the tart flavor which it must have, and will probably be saleable. It would not be as good as new honey, but will sell for cooking purposes and for bakeries. Some of it may even be quite good, as much depends upon the amount of fermentation which it underwent. It may be kept in barrels, after heating it, but the barrels must be dry, sound and sweet.

### WHAT THE NEWSPAPERS SAY ABOUT BEES

#### Serious and Foolish Statements Clipped from the Daily Papers

#### Stung to Death When Cow Kicks Beehive

Cairo, Ill., July 6.—Miss Missouri Durham, 65 years old, died today of injuries sustained when she was attacked by a swarm of bees which had been stirred up by a cow kicking over the hive.—Sullivan, Ind., Herald.

#### Linemen are Ousted

Gallipolis, O., July 6.—If a swarm of belligerent honeybees was encamped in a telephone fuse box and you were ordered to evict them, what would you do?

That's the problem facing local telephone linemen today. Several of

the men tried it yesterday and have swollen jaws to prove that the bees won't move.—Cleveland, O., News.

#### Orators in Congress Enthusiastic Over Bees

Washington, July 8.—Bees are stinging subjects in Congress these days.

Orators in the Senate, as well as the House were enthusiastic over the toothsome product of the winged worker, while sorrowfully reflecting on the business end of the little insect.

Recently members of the House wrought themselves up to a fiery pitch in a debate over the proposal that certain adult honeybees should be barred from the United States, while juvenile bees should be admitted without restriction.

But in consideration of the Republican tariff bill now before the Senate for passage, Democratic and Republican Senators have eclipsed the discussion in the House and have contrasted the "wild bee" with the "tame bee."

#### Cares for Bees

Mrs. Amanda Bose, old resident of Mackinaw, is 79 years of age and is probably one of the oldest ladies in the country who can skillfully handle bees. She is quite an experienced hand with them and within a few days last week hived eight swarms herself, without help.—Mackinaw, Ill., Enterprise.

#### Bees in Bath Room

A swarm of bees settled in the bath room of the C. L. Arthur home Saturday.—Portland, Ind., Review.

#### Girl Wrecks New Auto

Bloomsburg, June 17.—The sting of a bee was responsible for wrecking the automobile of Miss Maud Parker, of Millville. Miss Parker was driving her new coupe home after a trip to Bloomsburg, when, near Wanic's bridge, a bee flew through the open window and stung her on the leg. As she reached down to kill the bee she lost control of the machine. It plunged over a 6-foot bank. She escaped unhurt.—Harrisburg, Pa., Telegraph.

#### Beekeepers Attend "U" Farm Short Course

A highly practical short course in the art and science of beekeeping was held May 23 to 26 at University Farm. Six women students, four of whom came from the cities, were enrolled. Various trades and professions were represented by the men. An editor, photographer, carpenter, shoemaker, locomotive fireman, lumber dealer, machinist and teachers, clerks and farmers registered for the four days' course to study the modern system of bee management.—Detroit, Mich., Record.

#### He Becomes Unconscious

North Vernon, Ind., July 3.—Charles Brooks, east of this city, is seriously ill as a result of being at-



tacked by a swarm of bees. A mule belonging to Mr. Brooks upset a beehive. Mr. Brooks was stung probably several hundred times and became unconscious before a physician could be summoned. It is believed that he will recover.—Goshen, Ind., Democrat.

#### Bees Swarm to Spare Tire of Touring Car

Elmira, June 24.—Humming like an airplane, a swarm of bees sailed over the main street of Corning, and seeking a point to park for the night, volplaned to the spare tire of a car occupied by a touring party. Max Pettibone, a rural resident, separated from the crowd of standoffish spectators, borrowed a barrel from the grocery and hived the colony.—Hudson, N. Y., Register.

#### MISCELLANEOUS NOTES

##### Parker Gets Degree in Apiculture

At the commencement of Iowa State College of Agriculture, on June 21, last, R. L. Parker was granted the degree of Master of Science in Apiculture.

Profesor Parker received his B. S. at Rhode Island State College in 1915, also Sc. M. in Biology at Brown University in 1917. We are pleased to note that men like Parker are finding sufficient interest in our specialty to take advanced work in beekeeping.

##### Scott County, Iowa, Eeemen Meet

On July 31 the beekeepers of Scott County met at the apiary of the editor of the Davenport Democrat for a pleasant afternoon. There was much informal discussion and a short talk by Frank C. Pellett. Scott County has produced a good crop of honey this season and the beekeepers are enthusiastic.

##### Missouri Summer Meeting

Missouri beekeepers held a two-day field meeting at the home of H. G. Kull, at Trenton, in July. There were talks and demonstrations and picnic dinners and visits and a general good time. Missouri beekeepers are to be congratulated on the growth of their association under direction of President Diemer and Secretary Nina Scott.

##### Henry County Field Meeting

The Henry County beekeepers held their field meeting at the apiary of Ed. Kommer at Andover, Ill., on Wednesday, July 19.

There were 54 persons in attendance.

Mr. E. W. Atkins, of Watertown, Wis., spoke on "Value of Organization" and on "Beekeeping Practice."

Mr. Randolph Boyd, of Galva, Ill., who has served as Representative from this District for a number of years, was called on for a few remarks. Mr. Boyd can remember

when they used to have bees in box hives, and when they wanted some honey they would smoke the bees down to get it, and if there was any to sell, they could get 4 cents a pound for it.

The largest beekeeper who attended was F. J. Tollburg, of Galesburg, controlling 340 colonies, and Orville Nelson, of Woodhull, was the smallest beekeeper, with only one colony.

The next meeting will be held at Hooppole, Ill., in the apiary of Edward Lehman.

##### Ulster County Beekeepers Meet

The Ulster County Honey Producers' Co-operative Association held a field day and picnic on Friday, July 7. We were favored with a beautiful day (after a long rainy spell), which kept many of the farmer beekeepers away, as it was the first chance they had had to harvest the hay.

Prof. R. B. Willson, the new Extension Specialist at Cornell, gave an address and made a very favorable impression.

Miss E. H. Risch, the Lewis Co.'s Albany representative, was with us.

A trip around the Ashokan reservoir was a part of the day's run, and was greatly enjoyed by all.

##### Bees by Airplane

London, June 17.—Bees have been brought from Holland by air to replenish hives in Scotland.—Brooklyn Eagle.

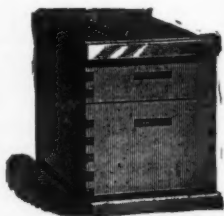
**HONEY**

**WANTED**

**HONEY**

We are in the market for both comb and extracted. Send sample of extracted, state how put up with lowest price delivered Cincinnati. Comb honey, state grade and how packed with lowest price delivered Cincinnati. We are always in the market for white honey if price is right.

**C. H. W. WEBER & CO., 2163-65-67 Central Ave., Cincinnati, O.**



## MR. BEEKEEPER—

We have a large plant especially equipped to manufacture the supplies that you use. We guarantee all materials and workmanship. We ship anywhere. We allow early order discounts and make prompt shipments. *Write for free illustrated catalog today*

*We pay highest cash and trade prices for beeswax*

**LEAHY MFG. CO., 90 Sixth Street, Higginsville, Missouri**

**J. W. ROUSE, Mexico, Missouri**

**A. M. HUNT, Goldthwaite, Texas**

### New York Field Meet

Five hundred beekeepers attended one of the most enthusiastic meetings ever held in the State of New York, at the home of Mr. N. L. Stevens, Venice Center, on August 4th. This was the annual picnic of the Empire State Federation of Beekeepers' Cooperative Association, Inc.

Cars started to arrive early in the morning and continued to come until noon. Some of the folks drove in over 200 miles to attend the meeting.

During the forenoon the beekeepers took the opportunity to go with Mr. Stevens through his honey house and home apiary. Mr. Stevens has an extracting outfit at each yard. At the home yard, however, he also has an extensive wax rendering outfit, which is made up of a Herscher wax press operated by two jacks in place of the pressure screw ordinarily furnished with such a press. Boiling water to operate press is obtained from a boiler in the basement.

After lunch, President Geo. B. Howe formally opened the meeting with an address of welcome and then called on Mr. C. J. Baldrige, who outlined the object of the Empire State Honey Marketing Association, Inc. Mr. Baldrige stated that this season would be devoted to the completion of the organization, and no honey would be handled by the Association this year. D. L. Woodward, a Director of the Honey Marketing Association, stated that the contract between the member and the Association would permit the beekeeper to maintain his local trade, and urged the men to join the organization.

Dr. E. F. Phillips outlined the growth of beekeeping since the beginning of the war and told of the increase in the consumption of honey.

The beekeepers were very pleased to hear Mr. R. B. Willson, who is successor to Mr. Geo. Rea as Extension Bee Specialist for New York State. Willson invited the beekeepers to call on him for assistance in their production and marketing problems, and also outlined practical means of eliminating non-productive colonies.

Mr. Geo. S. Demuth, Associate Editor of *Gleanings in Bee Culture*, and E. W. Atkins, of the G. B. Lewis Company, were also on the program.

Mr. S. R. House ably took care of the Question Box.

Between each talk a drawing contest was held. Prizes comprising queen bees, bee books, foundation, and complete hives were given by queen breeders, the bee journals and bee supply manufacturers. E. W. A.

### Wisconsin Field Meet

Wisconsin is a progressive State. About 160 beekeepers were gathered, August 7 to 11, at the Green Bay Beach, where they have a fine pavilion, and the meeting was upstairs in a large hall, just in view of the bay and well suited.

The National Honey Producers' League employed Mr. Campbell to make a digest of the law and court decisions interesting beekeepers in

the United States. This is about ready and will probably be entrusted to one of the bee magazines to publish, at as low a price as possible. It touches all legal points.

Dr. Phillips is authority for the statement that bees should not begin breeding in spring until they are able to carry pollen. We believe they might begin earlier than that in many sections. They usually do.

One pound of honey is needed to produce 1,000 bees, says Phillips, and he adds the statement that although a bee egg weighs only one-tenth of a milligram, the full-grown larva weighs 155.6 milligrams, or 1556 times as much as the egg from which it hatched. It surely takes some food to bring about this result.

The Ohio State Beekeepers Field Meet will take place at Delphos September 13-14; don't forget it.

Large hives. Yes, large hives everywhere. Everybody says large hives now, and we saw some very interesting 19-frame Langstroth hives, with double piles of supers on them, at the apiaries of Mr. F. J. Mongin, of Green Bay, who is wide-awake if anybody is.

Why are the bees afraid of smoke? Dr. S. B. Fracker says because smoke indicates fire, and when the tree in which the swarm lives gets afire it is time for the bees to prepare to leave, and they do by filling their honey sacs.

### Death of J. C. Wheeler

We have just learned of the death of Mr. J. C. Wheeler, of Oak Park, Ill., which occurred the latter part of June. Mr. Wheeler had been a beekeeper for thirty-five years on a large scale in Chicago and surrounding territory and was a well-known figure at the Chicago bee conventions.

He will be missed not only by his immediate family but by his colleagues in beekeeping. No announcement has yet been made as to the disposition of his bees, although we presume that the family will continue to carry on the business.

### Essex County Meeting

The Essex County, New Jersey, Beekeepers' Society had an inspection outing at the Stebbens Farm, Ridge Road, Cedar Grove, Saturday, July 29, at 2 p. m. Chas. J. Ledig, Secretary, did the demonstration work.

The Essex Beekeepers' Society accepted an invitation from Banker Lloyd W. Smith, president of Harris Forbes & Co., New York and Boston, who operates a large farm and the largest apiary in northern New Jersey, to visit his farm at Florham Park, near Madison, on August 26. The Society visited the Smith farm last summer.

### Carolina Manual

The State Beekeepers' Association of North Carolina has recently issued its third manual of beekeeping. It contains the official report of the Association, together with contributions from a number of well-known beekeepers. It is an attractive publication of about 36 pages, published especially for members, but containing much information of interest to others. Those interested can secure further information from the Secretary, J. E. Eckert, State College, Raleigh, North Carolina.

### Spraying Again

I have noticed in recent issues of the *American Bee Journal* the advice of some to use milkol and other insect repellants in sprays to keep the bees from sucking up the arsenate of lead solution. We always mix commercial lime and sulphur in our poison spray and have never noticed any bad effects on my bees. Mr. E. E. Mott, whose apiary is about one mile away, advises me that he has never sustained any loss from our spraying. In using lime and sulphur you kill two birds with one stone, as you kill what scale it falls on, and you protect your friends, the bees.

Frank W. Ireland, Michigan.

### A Good Apple Crop

Reports indicate a good prospect for apples in New York and New England. Some sections of Virginia were damaged by spring frosts, while others will have a fair crop. All told, the season is promising and generally speaking the apple crop promises to be good. Nearly all important apple-growing regions east of the Mississippi River, including the Canadian Provinces of Ontario, Quebec and New Brunswick, will have much larger crops than last year, the general average being nearly double last year's production.

### Let us tell you about the California Gold Medal Queens, The Queens with the Pedigree.

Our hardy, immune, prolific strain of 3-banded leather colored Italians. Developed from the world's best strains by careful selection and tested under California conditions for five years, with excellent results. My specialty will be breeding stock and every queen produced will receive my personal care and inspection. Now receiving orders for the season of 1922, which will be filled in the order of their receipt. Write for catalog and prices.

### THE COLEMAN APIARIES,

Geo. A. Coleman, Prop.,  
2649 Russell, St., Berkeley, Calif.

## O. E. TIMM

is back in Nebraska giving personal attention to all orders.

July and August are too hot and dry to raise queens down South, therefore we can turn out better quality queens and get them through quicker.

Italian Queens, \$1.00 each; \$90 per hundred.

THE BROOKSIDE APIARIES  
Bennington, Nebraska.



## TO THE WISE—

Mr. H. L. Jenkins, Hamburg, Iowa, sent us his order for 100 cases of 2-5 gallon cans, and saved \$21.00. Have you got our prices, to see what YOU can save?

**THE A. ROOT COMPANY**  
COUNCIL BLUFFS, IOWA

—ONE WORD WILL SUFFICE

**COMB  
HONEY**

**WANTED**

**STRAINED  
HONEY**

CAN HANDLE ANY AMOUNT  
CAR LOTS AND LESS

Let us hear from you as to what you have. We are the largest dealers in honey in the Chicago market. We are responsible and reliable. Our responsibility exceeds \$200,000. Ask your bank about us.

**COYNE BROTHERS**

119 W. South Water St., Chicago, Ill.

"When you want the Coin, ship to Coyne."

## BERRY'S QUEENS

bring repeat orders, because they insure honey crops and satisfaction to the buyer.

Booking Orders Now for Next Year.

**M. C. BERRY CO., Hayneville, Alabama**

### More Plant Notes

In reading your note on page 193 of the May issue, I am prompted to say that we can expand the range of the Scotch broom which I have seen for a half mile together blossoming with a beautiful yellow bloom along the roadsides in northwestern Oregon, between Forest Grove and the

Columbia River. I remember of seeing lavender, another foreign plant, in the bushes growing at the hotel at Tacoma, west of the building, on the landscaped slope toward the bay. Perhaps this might be of interest in connection with the discussion going on about the ranges of certain plants. Missouri. A. C. Burrill.



## CARNIOLANS

are very gentle, very prolific, wonderful honey gatherers, build exceedingly white combs, resist brood diseases equal to any race of bees, and will swarm no more than Italians, if properly managed.

Untested, \$1.50 each; \$16.00 per dozen.

Tested, \$2.50 each.

Introducing queens of this excellent race of bees now means populous colonies to go into winter quarters and early brood rearing and strong colonies for next season's crop.

**A. G. HANN, Glen Gardner, N. J.**

### PACKAGE BEES

For Spring Delivery

Write for prices and circular

**J. E. WING,**

156 Schiele Ave., San Jose, Calif.

## PACKAGE BEES AND QUEENS

We specialize on Three-band Italians Bred for Business.

Balance of the season we will furnish a 2-pound package of our hustlers with a select untested queen, for \$4.75; 25 or more, \$4.50 each. No queens, except with packages, before July 1. Prices after that date, from our best breeding queens:

Untested, \$1.00 each; \$10.00 per dozen; \$75.00 per 100.

Tested, \$1.50 each; \$15.00 per dozen.

Only one grade of queens shipped—Select. Promptness and efficiency our motto.

**CANEY VALLEY APIARIES, Bay City, Texas**

J. D. YANCEY, Mgr.

## BEEKEEPERS WE MANUFACTURE DOVETAILED HIVES, HOFFMAN FRAMES, SECTIONS AND SHIPPING CASES

Our hives are made of best grade White Pine, cut accurate and smooth to standard measure. Sections are made of Basswood polished on both sides. There are no better made.

We carry a complete line of everything used in the apiary. Our shipping facilities are as good as can be found anywhere. We want your business. We guarantee prompt and satisfactory service. Price list free.

**MARSHFIELD MANUFACTURING COMPANY, Marshfield, Wis.**

## GOLDEN ITALIAN QUEENS

	Nov. 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12
Untested.....	\$2.00	\$ 9.00	\$17.00	\$1.50	\$ 8.00	\$14.50
Select Untested.....	2.25	10.50	18.00	2.00	9.50	16.00
Tested.....	3.00	16.50	30.00	2.50	12.00	22.00
Select Tested.....	3.50	19.50	36.00	3.00	16.50	30.00

**BREEDERS \$12.50 TO \$25.00**

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed  
NO NUCLEI, FULL COLONIES OR POUND PACKAGES

**BEN G. DAVIS, Spring Hill, Tenn.**

**BOOKED** to capacity on early May orders. Heavy discounts on introduced laying-enroute-to-you queens with frames, and pounds after May 25.

**JES DALTON,  
Bordelonville, La.**

Will have Golden Italian Queens for delivery after May 25, untested \$1.50 each; 12, \$14.50; tested, \$3; after July 15 untested \$1.25.

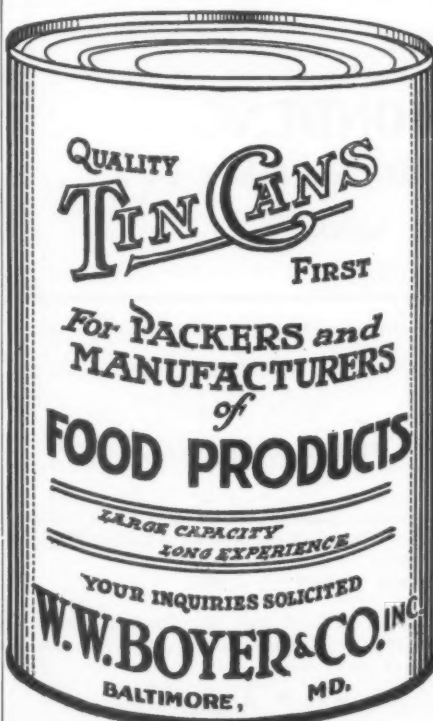
**T. J. TALBOTT & BRO.**

409 Marx St., South Richmond, Va.

## THE BOOK YOU SHOULD BUY

C. P. Dadant has recently revised and rewritten Langstroth's classic book on the Honeybee. The book now contains the best from three widely known writers on beekeeping, Langstroth, Charles Dadant and C. P. Dadant. The new edition has 448 large size pages and sells for \$2.50.

American Bee Journal, Hamilton, Ill.



## QUINN'S QUEENS OF QUALITY

Have no superior. "There's a reason." Are Mendelian bred, good qualities accentuated. Gray Caucasians, gray Carniolans, most gentle of all, prolific, hardy, vigorous, disease-resisting, white comb builders—they deliver the goods.

**CHAS. W. QUINN,  
Powhatan, Va.**

## QUEENS OF

## Moore's Strain

OF ITALIANS PRODUCE WORKERS

That fill the supers quick  
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.  
Untested Queens, \$1.25 each; 6, \$6.50; 12, \$12.  
Select Untested Queens, \$1.50 each; 6, \$8; 12, \$15. Safe arrival and satisfaction guaranteed.  
I am now filling orders by return mail.

Circular free.

**J. P. MOORE, Queen Breeder**  
Route 1, Morgan, Kentucky.

## QUEENS

Our Old Reliable Three-banded Italians are Honey Getters. They are gentle, prolific and very resistant to foulbrood. Orders booked for one-fourth cash. Safe arrival guaranteed. Circular free. Prices April 1 to July 1:

	1	6	12
Untested ----	\$1.00	\$5.50	\$10.00
Select Unt. --	1.25	6.50	12.50
Tested -----	2.25	12.50	24.00
Select Tested,	\$3.00 each.		

See our ad in January Journal.

**JOHN G. MILLER**

723 C St., Corpus Christi, Texas.

## Heavy Laying Italian 75c Queens 75c

Bred for honey production. They are large, yellow and very prolific, and produce bees that are large, vigorous, disease-resistant, gentle, and the best for honey gathering.

I breed only the best, and guarantee perfect satisfaction; also safe delivery in U. S. and Canada.

Untested, 75c; tested, \$1.50.

**ULIS BLALOCK, Christine, Tex.**



**QUEENS****QUEENS**

## KNIGHT'S THREE BANDED

Give them a trial and be added to my book of satisfied customers

### PRICES FOR BALANCE OF SEASON:

1 Select untested	-----	\$1.00
5 Select untested	-----	\$4.75
10 Select untested	-----	\$8.50
Tested Queens	-----	\$2.00 each

For larger quantities write for prices.

I have the bees, men and equipment to handle rush orders by return mail. Pure mating and satisfaction guaranteed. It is left with customer to say what is satisfaction. No disease.

**JASPER KNIGHT, Hayneville, Alabama**

## Big Reductions on Bee Supplies

Shipping cases, \$30 per 100.

Slotted section holders, \$3 per 100.

Sections, 1 1/2, No. 1, \$10 per 1,000.

Job lots of frames, regular size, \$3 per 100.

Standard Hoffman frames, 9 1/2 in. deep, \$4.50 per 100.

Unspaced wedged top-bar frames, 9 1/2 in. deep, \$2.75 per 100.

SEND FOR CATALOG AND PRICE LIST

**CHARLES MONDENG**

146 Newton Ave. N. and 159 Cedar Lake Road

MINNEAPOLIS, MINN.

**PORTER**

**BEE  
ESCAPE  
SAVES  
HONEY  
TIME  
MONEY**



For sale by all dealers

If no dealer, write factory

**R. & E. C. PORTER, MFRS.**  
Lewistown, Illinois, U. S. A.

(Please mention Am. Bee Journal when writing)

**HOOSIER-BRED QUEENS**  
HIGH QUALITY  
THREE-BAND ITALIANS

	1	6	12
Untest. Queens	\$1.50	\$ 8.50	\$16.50
Select untested	2.00	11.50	22.50
Tested	2.50		
Select tested	3.00		

Safe arrival and satisfaction guaranteed. Circular free on your request.

**WM. R. STEPHENS,**  
Wingate, Indiana.

## The Bee World

The leading bee journal in Britain, and the only international bee review in existence. It is read, re-read and treasured. Will it not appeal to you?

Specimen copy free from the publishers: The Apis Club, Benson, Oxon, England.

Send us a post card today. It is well worth your little trouble.

## MACK'S QUEENS

75c each

We are uniting our nuclei this month and are making the price of queens so low that they will go in a hurry. Send in a trial order and be convinced that Mack's queens are the best on the market. If unable to fill your order it will be promptly returned.

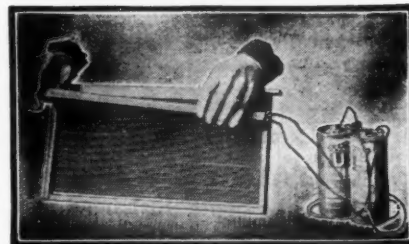
Every queen guaranteed to give satisfaction, or money back.

Untested 75c each. Select untested 90c each.

**HERMAN McCONNELL**

Robinson,

Illinois.



### ELECTRIC IMBEDDER

Price without Batteries, \$1.00  
Not Postpaid.

Weight 1 lb.

Actually cements wires in the foundation. Will work with dry cells or with city current in connection with transformer. Best device of its kind on the market.

**Dadant & Sons, Manufacturers**  
HAMILTON, ILL.

## SCOTT QUEENS ARE GOOD QUEENS

### MY QUEENS ARE GETTING RESULTS

among my hundreds of honey-producing colonies and for my customers. One writes: "Dear Mr. Scott: please book my order for one-half dozen queens. Those I received from you last season have made 150 lbs. comb honey so far this season. Yours truly." (Name on request.)

### UNTESTED GOLDEN OR THREE-BANDED QUEENS

After July 1, one, \$1.25; six \$7; dozen, \$13. Prompt delivery; no waiting. Pure mating, safe arrival and satisfaction. No disease. Card brings circular.

**ROSS B. SCOTT, LAGRANGE, IND.**

## HONEY CANS AND CASES

Several carloads, all sizes, just received at our Ogden, Utah and Idaho Falls, Idaho, warehouses. Quick service; lowest prices. Also comb honey cases, all kinds.

### SUPERIOR HONEY CO., Ogden, Utah

(Manufacturers Weed Process "SUPERIOR FOUNDATION" and Dovetailed Beehives.)

## BEE SUPPLIES

### SPECIAL PRICES ON THE FOLLOWING NO. 2 SECTIONS

100,000 4¼ x 4¼ 1½ plain at \$7 per 1,000.

50,000 4¼ x 4¼ 1½ two beeway at \$8 per 1,000.

The above are all packed 500 to a crate.

### Reduced Prices on Tin and Glass Honey Containers.

Send us a list of your requirements of containers and we will make you prices that will save you money.

We can make shipment same day order is received.

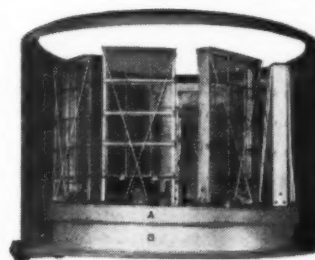
We carry a complete line of **Everything for the Beekeeper**, and can make prompt shipment.

Write for our catalog.

### A. H. RUSCH & SON CO.

REEDSVILLE, WIS.

## Lewis Extractors



Lewis-Markle Power Honey Extractor.  
Tank cut away.

A—Pan over machi... B—Bottom of tank.

Made in 4 and 8-frame sizes. Accommodates 2 sizes of baskets, power operation, machinery underneath, no vibration, tank and basket instantly removable for cleaning. A commercial success. Circular free. Address:

**G. B. LEWIS COMPANY**  
WATERTOWN, WIS., U. S. A.

There's a Distributor Near You.

## WESTERN BEEKEEPERS!

We handle the finest line of bee supplies. Send for our 1922 price list. Our quotations will interest you.

The Colorado Honey Producers' Association, 1424 Market St., Denver, Colo.

## \$797 Buys This 7-Room Home

Price includes lumber, millwork, paint, hardware, roofing, etc. House contains large living room, dining room, kitchen, three bedrooms with closets and bath. Materials cut to fit. Our system makes it easy for anyone to erect this attractive home. Send for special circular No.

THE ALADDIN COMPANY  
BAY CITY MICHIGAN



## Goldens the Best

14 years in business should give you best queens possible. Unt., \$1 each, or 6 for \$5; 25 or more, 75c each. Virgins, 40c each, or 3 for \$1. Satisfaction and promptness is my motto.

R. O. COX, Rutledge, Ala.

## QUEENS! QUEENS!

Large leather-colored, three-banded Italian queens; 10-year selection, bred from honey-gathering; gentle, hardy and long-lived. Price, select untested, 1, \$1.25; 6, \$6.50; 12, \$12. After July 1: 1, \$1; 6, \$5. Tested \$1.50 each. Write for price on large orders. Free booklet "How to transfer, Get Honey and Increase."

J. M. GINGERICH, Kalona, Iowa.

## Poole's Italian Queens

### WILL PLEASE YOU

Why? Because I am breeding from breeders originally obtained from Italy and use every effort to get out queens that will please the customers. I ask only for a trial. Safe arrival and satisfaction guaranteed.

Untested, 1 to 12, 85c each; 12 to 25, 75c each; 25 to 100, 70c each; 100 up, 65c. Tested \$2 each.

RUFUS POOLE,  
Greenville, Ala.



**A SUPERIOR QUALITY  
AT LESS COST**

# SUPPLIES

**A SUPERIOR QUALITY  
AT LESS COST**

(MADE BY THE DIAMOND MATCH CO.)

## Reason why our Prices are Reasonable

The Diamond Match Company, who manufacture our supplies, are the largest manufacturers in the world who make bee supplies. They own their own timber lands, mills and factories. We pass on the full advantage of the resulting low production cost to the beekeeper.

## One Story Complete Dovetailed Hives

With metal telescope cover, inner cover, reversible bottom Hoffman frames, nails, rabbets.

### STANDARD SIZE

Crate of five, K. D. 8-frame .....\$12.65  
Crate of five, K. D. 10-frame .....\$13.25

### JUMBO SIZE

Crate of five, K. D. 10-frame .....\$14.25

### FULL DEPTH HIVE BODIES

frames, nails, rabbets.

Standard size, crate of five, K. D. 8-frame .....\$5.20  
Standard size, crate of five, K. D. 10-frame ..... 5.85  
Jumbo size, crate of five, K. D. 10-frame ..... 6.85

### COMB HONEY SUPERS

For 4x5x1 3/8 plain sections, including section holders, fence separators, springs, tins and nails.

Crate of five, K. D. 8-frame .....\$5.60  
Crate of five, K. D. 10-frame ..... 6.00

### HOFFMAN FRAMES

Standard size .....100, \$5.20; 500, \$25.00  
Shallow .....100, \$4.30; 500, \$21.00  
Jumbo .....100, \$5.80; 500, \$28.00

### DIAMOND BRAND FOUNDATION

Medium, 5 lbs. 68c lb.; 50 lbs. 65c lb. - Thin super, 5 lbs. 75c lb.; 50 lbs. 72c lb.

### ALUMINUM HONEY COMBS

Standard Langstroth .....\$5.00 box of 10  
Shallow Extracting .....\$4.00 box of 10  
Jumbo .....\$6.00 box of 10

**HOFFMAN & HAUCK, Inc., Woodhaven, N. Y.**

# Crop and Market Report

Compiled by M. G. Dadant.

For our September report we have asked the following questions of reporters: 1. How has the honey crop been? Is it as good as last year? 2. In what condition are honey plants and what are the prospects for the balance of the season? 3. How is the fruit crop in your section? 4. How is honey selling? Any demand for carload lots from the bottlers? 5. At what price are you selling honey, retail or jobbing? 6. What do you think honey should be worth in a jobbing way, comb and extracted?

## THE CROP THIS YEAR

Vermont reports the crop possibly a little in excess of 1921, but the balance of the New England States seem to have had a much smaller crop than last year. New York also reports a short crop of white honey, probably less than 30 pounds per colony. Pennsylvania also reports about 30 per cent of last year and Ohio in the neighborhood of half as much as in 1921.

Indiana has had a fair crop and Illinois' crop will be probably 25 per cent more than a year ago, and possibly larger than this. Michigan will also average better than last year, and Wisconsin and Minnesota will probably have a crop which will average at least as good as last year. South Dakota has had more honey than a year ago, as has Iowa, although western Iowa was hit early by severe drought. Kansas is better than a year ago and Missouri reports a crop probably 200 to 300 per cent better than in 1921.

Turning to the Southern States, Georgia and Florida report a very good crop. In North Carolina, also, the crop has been fair, but Alabama reports a very poor crop, as does Mississippi, which will not have over 50 per cent of last year. Louisiana has about an average crop. In Tennessee the crop was late, as it was also in Kentucky, and it has been light. Texas' crop has correspondingly been very light for the early flows, probably not over half a crop being harvested.

In Arizona, New Mexico and Colorado the crop will average well up to last year, with possibly a little in excess. Idaho reports about an average crop, but Montana will likely not have more than 75 per cent as much honey as last year unless the weather recently has turned for the better and made more than average crop for the latter half of the season. In Utah the crop has been very good, as it has in Nevada, probably ranking as good as last year. Oregon reports probably a better crop than in 1921, with Washington likely much less than a year ago, owing to the fact that poisoning from spray cut in greatly on the strength of the colonies last spring. California reports vary. Northern California seems to be very good, as does Southern California, which will probably have 30 per cent better than a year ago. Ventura County will likely have not more than half a crop, however, and one or two other counties report the crop short.

## HONEY PLANT PROSPECTS

In the New England States and New York the prospects are good, owing to copious rains. In Indiana, however, and most of the Central Western States the prospects are only fair for the balance of the year, owing to a period of drought which has not yet been broken at this writing. In Missouri and Kansas the prospects are fair for the balance of the season. All of the Southern States report good prospects for the balance of the year except possibly Tennessee, which seems to be destined to have a poor crop all around this year.

Colorado reports the weather as entirely too dry for heavy honey yield and Montana also is in the same category. In California the crop is all made, so that the prospects for the future will not change the average.

## THE FRUIT CROP

In practically all of the country the fruit crop has been very much more than average, except in some New Eng-

land States and Pennsylvania and Indiana, where the fruit is reported as being below average. Washington's fruit crop seems smaller than usual. The same is true in Idaho, where the crop is reported fairly light. However, these lighter fruit states are much more than overbalanced by the heavy crops in practically all other districts. The Central West, especially, has fruit trees laden with fruit which is just beginning to seek the market.

## HONEY SALE

In practically all instances the reports are of very light sales of honey, which is not surprising in view of the hot weather. Honey sales usually do not pick up until September, at least. Carload sales are practically nil.

## PRICES RECEIVED

In most all instances beekeepers have been holding for prices equal to last year, at least, and some reports are that prices are being held, especially for extracted honey, somewhat in excess of prices a year ago. These prices range approximately at retail \$1.10 for a 5-pound can, \$2.00, 10-pound can, and \$6.50 per case for comb honey, f. o. b. central western shipping point.

## SUGGESTED JOBBING PRICES

Although retailers are asking about the same prices as last year for honey, there is an appreciable inclination to ask a stiffer price than a year ago for white honey in jobbing lots, especially for extracted honey.

Most all white clover producers are asking a price in excess of 10c per pound and many of them are holding for 12c. This, of course, would be in lots of less than carload, although in jobbing.

Comb honey seems to be more freely offered at a price of about \$4.80 per case, jobbing.

The Texas Honey Producers' Association has established prices on the basis of 7½c for extracted honey and 13½c for bulk comb.

Some California and Western producers are suggesting that amber honey should sell at a price of 6½c to 8c per pound, with white and water white honey at a price of from 8c to 10c per pound. They also suggest a price of comb honey at \$4.00 to \$5.50 per case, depending upon grade. This, of course, is the suggestion of shippers in the Rocky Mountain and Pacific Coast territory, so that Central West and Eastern beekeepers should figure the differential in freight in getting at the prices at which this honey would sell in their own territory.

We have report of one lot of 10,000 pounds of Iowa white clover honey having sold at 9½c per pound f. o. b. shipping point, and another lot consisting of a carload having been sold at a price of 9½c per pound f. o. b. shipping point.

Some of the largest Michigan producers are holding their finest white honey at a price of in the neighborhood of 12c per pound. We also have report that one of the largest bottlers of honey is out now after white clover honey at a basis of 10c per pound f. o. b. shipping point in Central West.

## SUMMARY

Since the honey crop of 1920 was all cleaned up last year, it seems plausible that the 1922 crop should be taken care of without any difficulty, even though it is likely to be considerably in excess of the crop a year ago.

This, however, does not apply to comb honey. There seems to have been several cars of comb honey carried over, possibly a little more than usual, and the demand does not seem to be as brisk as it might be. However, with times coming back gradually to normal and the tendency for a little higher price in other lines, it may be possible that this comb honey will move without difficulty at a price equal to that asked in 1921.



## CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 5 cents per word, with no discounts. No classified advertisements accepted for less than 35 cents. Count each initial or number as one word.

Copy for this department must reach us not later than the 15th of each month preceding date of issue: If intended for classified department it should be so stated when advertisement is sent.

### BEEES AND QUEENS

**NEW HONEY**—Atwater offers extra nice product of heavy flow.

**FOR SALE**—Our bees and equipment, about 50 colonies in 10-frame hives, enough equipment to run 100 colonies. Our bees are free from disease and better equipment you could not buy at any price. Nearly all this year's crop is still on the hives. Our stock is Italians, nearly pure. Address

P. N. Korb, Fairwater, Wis.

**3-BAND** Italian queens for September; 6 for \$5; 12 for \$9. Sent by return mail and guaranteed to be purely mated and give entire satisfaction.

J. F. Diemer, Liberty, Mo.

**CARNITALIAN**—What's a Carnitalian? A blended bee. A combination of the two finest sorts of bees; the Carniolan, from the Julian Alps, the gentlest, hardest and most prolific bees known; and the American-Italian, product of fifty years of skilled breeding; golden drones of the finest procurable strains have been crossed and re-crossed with pure imported Carniolan stock from the famous breeder, Jan Strgar. These early crosses, though variable in color, are remarkable bees. I shall have Carnitalian queens in quantity next season, 1923. John Protheroe, Rustburg, Virginia.

**FOR SALE**—150 colonies Italian bees of good breeding. No disease. Ten-frame hives. Combs. Hoffman frames. Everything necessary for production of extracted honey. Priced for early sale. Write,

S. D. Clark, Bayfield, Wis.

**PURE 3-banded** Italian queens, reared by the Doolittle method from the best honey-producing mothers, \$1.00 each; tested, \$2.00. I guarantee pure mating and safe arrival.

H. N. Boley, Hillsboro, Iowa.

**FOR SALE**—400 colonies bees in alfalfa-cantaloupe locations; also one early sage location, good for 300 or more colonies, where I have made 150 lbs. and 30 per cent increase, then moved back to the alfalfa to finish the season. Sickness reason for selling. Harry Cross,

901 N. 4th St., El Centro, Calif.

**FOR SALE**—70 colonies of bees in 10-frame hives, with the whole equipment or without; in good condition. No foulbrood. For particulars, write,

William Loge,

Sta. D., R. B357, Milwaukee, Wis.

**TRY** Poole's 3-band Italian queens. They are guaranteed to arrive safely and give satisfaction. Price, untested, 85c each; 12 or more, 75c each; tested, \$2 each.

Rufus Poole, Greenville, Ala.

**FOR SALE**—400 colonies of bees and equipment, 3 locations; or will sell less.

Chas. Heim & Sons, Three Rivers, Tex.

**BEEES FOR SALE** in lots of one colony up to 100 or more, as desired; or a series of out-yards, including small house in town, 32-foot honey house, 8-frame power extract engine, saw table, 150 new hives in K. D. Ford auto, and various other items required in the business. In the past 19 years I've produced 75 tons of honey in this locality. If whole outfit is desired it can be bought as a going concern by paying 25 per cent down; balance can remain 1, 3 or 5 years at 7 per cent, with acceptable backing of note. Cause for selling, doctor's insistence, age, ill health and laziness on my part. Correspondence solicited.

A. W. Smith, Birmingham, Mich.

**CARNIOLAN ALPINE QUEENS**—The largest, hardest and most prolific bee of today. As one authority says: "Probably the most promising material in the world is being developed by Jan Strgar, of Europe, his Carniolan bee." We have it! A short time ago we received direct from this world-wide breeder a very fine, pure Carniolan queen. Booking orders for a limited number from this imported mother for September and October delivery. Write for prices and information. Safe arrival and satisfaction guaranteed. Your opportunity to get pure, genuine Carniolan queens of unrivaled breeding.

W. A. Holmberg, Denair, Calif.

**TRY MY** Caucasian or Italian 3-frame nuclei at \$5.50 each with tested queen; with untested queen, \$5 each. Tested queens, \$1.50 each; untested, \$1.00 each. Italians by return mail. No disease. Peter Schaffhauser, Havelock, N. C.

**FOR SALE**—Golden Italian queens, untested 90c each, or \$9 per doz.

E. F. Day, Honoraville, Ala.

**FOR SALE**—On October 1, 20 hives bees in standard 10-frame Jumbo hives, at \$10 per hive. All combs on wired foundation.

Harry Brown, Vermont, Ill.

**ELTON WARNER'S QUALITY QUEENS**—Progeny of his famous Porto Rican breeding stock. Write for price list.

Elton Warner Apiaries, Asheville, N. C.

**FOR SALE**—200 colonies, 4 locations, 4 main crops, \$1.250.

R. H. Yearnshaw, Maxwell, Calif.

**QUEENS**—3-banded Italians; also goldent, true thrifty kind. Untested, 1, 85c 6, \$4.80; 12, \$9.00. Tested, 1, \$1.75; 6, \$10.50; 12, \$20.00. Select tested, 1, \$2.00; 6, \$11.50; 12, \$22.00. No disease. Safe arrival and satisfaction guaranteed.

P. O. Watkins, Callasaja, N. C.

**LOW PRICES**, high quality. For balance of season select bright three-band Italian queens, 85c each; three to six, 70c; \$8 per dozen. Our queens are second to none in gentleness, prolificacy and hustling; guaranteed to arrive in first-class condition and to give satisfaction.

J. L. Morgan,

Tupelo Honey Co., Columbia, Ala.

**PURE ITALIAN QUEENS** by return mail; also a limited number of silver gray Carniolans, \$1 each, \$10 per dozen. For larger number write. Send all orders for queens during August and September to my breeder, M. G. Ward, Lathrop, Calif. All other correspondence to me direct.

J. E. Wing, 155 Schiele Ave., San Jose, Cal.

**HOOSIER-BRED QUEENS**—Three-banded Italians. Untested \$1.50 each, 6 for \$8.50; select untested, \$2 each, 6 for \$11.50; tested \$2.50 each; select tested \$3 each. Safe arrival and satisfaction guaranteed. Circular free on request.

Wm. R. Stephens, Wingate, Ind.

**GOOD QUEENS** at a low price. I have only two grades of queens, that is, tested and untested. I send out good looking and good laying queens of the 3-band strain. If you are not pleased with them, send them back and get your money. One queen, \$1.00; 25 or more, 90c each; one tested queen, \$1.25; 25 or more \$1.15 each.

W. H. Moses, Lane City, Texas.

**UNSURPASSED ITALIAN QUEENS**—August and September, untested, 1, \$1; 6, \$5.75; 12, \$11; 50, \$45; 100, \$85. Tested, 1, \$2; 6, \$11. Every queen is mated and laying before she is mailed.

J. D. Harrah, Freewater, Ore.

**WARRANTED PURE MATED** Italian queens in special sure-introducing cages. First order, \$1.25 each; 30 years experience in queen rearing. No honey in queen candy.

Daniel Danielsens, Brush, Colo.

**FOR SALE**—Golden Italian queens, 1 untested, \$1.00; 6 for \$5.00. Tested, \$2.00.

J. F. Michael, Rt. 1, Winchester, Ind.

**FOR SALE**—Italian queens. Untested, \$1.25 each; 6, \$7.00; 12, \$13.50. Tested, \$2.00. Safe delivery and satisfaction guaranteed.

R. B. Grout, Jamaica, Vt.

**CALIFORNIA QUEENS**—100 per cent perfect; large, vigorous Italians, guaranteed layers. They are making a hit, as proven by repeated orders and letters of appreciation. Am building a name and reputation; try at least one; you will surely want more then. Prices reduced. Select untested, 1, \$1; 6, \$5.50; 25, 90c each.

H. Peterman, R. F. D., Lathrop, Calif.

**REQUEEN** with Simmons Queens. Prices reduced.

Fairmont Apiary, Livingston, N. Y.

**ITALIAN QUEENS**—Three-banded, select untested, guaranteed. Queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness, and perfect markings. Price, after July 1: \$1.25 each; 12, \$1.00 each. Special prices on larger orders. Send for circular.

J. H. Haughey Co., Berrien Springs, Mich.

**WE ARE OFFERING** our bright Italian queens at 85c each, \$9.00 per dozen, \$65 per 100 in 100 lots. Safe arrival, pure mating and reasonable satisfaction guaranteed in United States and Canada.

Graydon Bros., Rt. 4, Greenville, Ala.

**BEEES AND QUEENS** from my New Jersey apiary.

J. H. M. Cook,

86 Dey St., New York City.

**ITALIAN BEEES**—Full colonies with Italian queen, \$15; two for \$25. Three-frame nucleus with queen, \$6.50. Three-pound package with queen, \$6.50. No disease. Safe arrival and satisfaction guaranteed.

Van's Honey Farms,  
Van Wyngarden Bros., Props.,  
Hebron, Ind.

**SWARTS' AMERICAN GOLDEN QUEENS** produce golden bees of highest quality. Untested, \$1.25 each, 6 for \$6.50; tested, \$3.00. Satisfaction guaranteed.

D. L. Swarts, Rt. 2, Lancaster, Ohio.

**FOR SALE**—Golden Italian queens; untested, \$1, 6 for \$5.40; 12 or more, 80c each; tested, \$1.50; select tested, \$2.50. No disease of any kind; bees very gentle and good honey gatherers.

D. T. Gaster, Rt. 2, Randleman, N. C.

**SPICER'S 3-band** Italian queens by return mail. If you are interested in improving your stock and getting larger returns from your bees, head your colonies with these queens. Untested, \$1.00; 6, \$5.50; 12, \$10.00. Tested, \$2.00 each.

Rob't B. Spicer, Wharton, N. J.

**BOOK YOUR ORDERS FOR QUEENS NOW**—Goldens, \$2; tested, \$3; banded, \$1.50; tested \$2.50; six or more, 10 per cent less.

Clover Leaf Apiaries, Wahoo, Neb.

**WE SPECIALIZE** on three-band Italians, bred for business. See ad. elsewhere for prices.

Caney Valley Apiaries,

J. D. Yancey, Mgr., Bay City, Texas.

**HEAD YOUR COLONIES** with Williams' Italian queens of quality and get more pleasure and profit from your bees. They produce bees that are gentle, hardy and hustling. Descriptive circular free. Select untested 75c each.

P. M. Williams, Ft. Deposit, Ala.

**"SHE-SUITS-ME"** Queens, line-bred Italians. \$1.50 each; 10 to 24, \$1.30 each; 25 to 49, \$1.25 each; 50 to 99, \$1.20 each; 100 queens, \$1.15. See page 38 of January number.

Allen Latham, Norwichtown, Conn.

**QUEENS**—Three-band, special price for June and July. To decrease our nuclei through summer we will ship our pedigreed strain of honey-getting 3-band queens at \$1 each.

Dr. White Bee Co., Sandia, Texas.

**BURLESON'S** three-banded Italian Queens. For balance of 1922, \$1 each or \$90 per 100. Safe arrival and satisfaction guaranteed. Send all orders, together with money, to my manager, J. W. Seay, Mathis, Texas.

T. W. Burleson, Waxahachie, Texas.

**BEEES BY THE POUND, ALSO QUEENS**—Booking orders now. Free circular gives prices, etc. See larger ad elsewhere.

Nueces County Apiaries, Calallen, Texas.

E. B. Ault, Prop.

**QUEENS, QUEENS**, from my old leather-back Italian queen. Ready to ship after April 15. She is the head of my apiaries. Untested, \$1.25; tested, \$2.50; select tested, \$3.00. More than 12, prices on application. Guaranteed safe delivery. O. O. Wilder & Son,

Rt. 2, Box 14, Corpus Christi, Texas.

**TRY ACHORD'S** Package Bees and Queens. Price list by return mail.

W. D. Achord, Fitzpatrick, Ala.

**GOLDEN QUEENS, GOLDEN**—1922 price: untested, one, \$1.25; doz., \$12. Select untested, one, \$1.50; doz., \$15; tested, one, \$2.50, doz., \$27.50. Pure mating and safe arrival guaranteed in United States and Canada. Booking orders now.

Tillery Bros., Georgiana, Ala.

**FOR SALE**—Early package bees, nuclei and queens. Shipping season from March 1 to June 1. We handle 1,800 colonies. No disease.

Loveitt Honey Co.,

602 N. 9th Ave., Phoenix, Ariz.

**THREE-BANDED ITALIAN QUEENS**—Select untested, \$1 each, \$9 per dozen; 1-lb. package with queen, \$3; 2-lb. package with queen, \$5. Safe arrival and satisfaction guaranteed.

W. T. Perdue & Sons, Rt. 1, Ft. Deposit, Ala.

**QUEENS**—We are prepared to furnish queens in quantities promptly. These queens are reared for us by the most reliable breeders. Write for prices.

Dadant & Sons, Hamilton, Illinois.

**FOR SALE**—Leather colored Italian queens tested, until June 1, \$2.50; after, \$2. Untested, \$1.25; 12, \$13. Root's goods at Root's prices.

A. W. Yates,

15 Chapman St., Hartford, Conn.

"ACE-HIGH" three-banded Italians hustle. Bred from excellent stock. No effort or expense spared to produce quality. No disease. Prices reasonable. Send for descriptive circular now, before you forget.

A. G. Van Ronzelen,  
Route 2, Box 212, San Antonio, Texas.

BEES AND QUEENS at reduced prices. Cypress hives for sale. Write for terms.  
Otto Diestel, Elza, Ga.

CARNIOLAN QUEENS—None better. Select tested, \$2.50 each; select untested, \$1.25 each. Also choice Italians, same prices. Send for circulars.

Geo. W. Coltrin & Son, Mathis, Texas.

### HONEY AND BEESWAX

NEW HONEY—Atwater offers extra nice product of heavy flow.

BEESWAX WANTED—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or your own station, as you may desire.

Dadant & Sons, Hamilton, Ill.

FOR SALE—Choice clover extracted honey, packed in new 60-lb. cans. Write for prices, stating quantity desired.

J. D. Beals, Oto, Iowa.

CHOICE new white clover honey in new 60-lb. cans, 120 lbs. net \$16; sample 20c.

Edw. A. Winkler, Rt. 1, Joliet, Ill.

FOR SALE—Extracted honey, white and dark. Edward Hogan, Canandaigua, N. Y., Box 128.

FOR SALE—Fine quality raspberry-milkweed honey in new 60-lb. cans.

P. W. Sowinski, Bellaire, Mich.

FOR SALE—50,000 lbs. extra fancy white clover honey. Price: One 60-lb. can, 16c a pound; two 60-lb. cans, 15c a pound. Sample bottle by mail, 10c.

J. M. Gingerich, Kalona, Iowa.

FOR SALE—Finest Michigan raspberry, basswood and clover No. 2 white comb, \$3.50 per case; No. 1, \$4; fancy, \$4.50; extra fancy, \$5, 24 Danz. sections to case. Extracted, 60-lb. cans, 10c lb.

The Associated Apiaries, Petoskey, Mich.

FOR SALE—Choice white clover and basswood honey, mostly basswood. State quantity desired.

Jos. Hesseling, Potosi, Wis.

WANTED—White clover extracted honey in exchange for 100 new 10-frame full-depth supers, with L. frames, nailed but not painted. Lewis goods. Best offer by Sept. 10 takes.

John C. Bull, Valparaiso, Ind.

CHOICE new mesquite honey in 60-lb. cans, 120 lbs. net \$14.40. Sample 10c.

Chas. Heim & Sons, Three Rivers, Tex.

FIRST QUALITY CLOVER HONEY, 2 60-lb. cans, \$16.80; case of 6 10-lb. pails, \$9.00.

Lewis Klaty, Carsonville, Mich.

CHOICE new white clover honey in new 60-lb. cans, 120 lbs. net, \$15.00; sample 20c.

Edw. A. Winkler, Rt. 1, Joliet, Ill.

FOR SALE—No. 1 white comb honey, \$6 per case of 24 sections; No. 2, \$5 per case, six or eight cases to carrier. Amber extracted, 2 60-lb. cans to case, 10c per pound; amber in barrels, bakers' grade, 8c per pound; clover in 5-lb. pails, \$11 per dozen.

H. G. Quirin, Bellevue, Ohio.

FOR SALE—12,000 lbs fancy white clover honey in 60-lb. cans and 5-lb. pails. Sample 10c.

W. H. Mays, Goshen, Ind.

FOR SALE—Choice new clover extracted honey, put up in new 60-lb. cans. Write for prices, stating quantity desired.

W. M. Peacock, Mapleton, Iowa.

MY NEW CROP of extracted and comb honey, unexcelled for quality. Prompt service and satisfaction guaranteed; sample 15c, to apply on first order.

C. W. Bedell, Earlville, N. Y.

FOR SALE—50,000 lbs extra fancy white clover honey. Price: One 60-lb. can, 15c a pound; two 60-lb. cans, 15c a pound. Sample bottle by mail, 10c.

J. M. Gingerich, Kalona, Iowa.

HONEY FOR SALE—In 60-lb. tins, water white orange, 15c; white sage, 14c; extra light amber sage, 12c; New York State buckwheat, 10c, for immediate shipment from New York.

Hoffman & Hauck, Inc.,

Woodhaven, N. Y.

HONEY—Atwater sells fine alfalfa-clover honey, extra strong cases, case of two 60-lb. cans, \$12; case of twelve 5-lb. pails, \$7.30, all f. o. b. here. Ten-lb pails all sold out; plenty of the others on hand.

E. F. Atwater, Meridian, Idaho.

### SUPPLIES

NEW HONEY—Atwater offers extra nice product of heavy flow.

GOOD EXTRACTOR cheap, 8-frame reversible, \$20.

Lorenzo Clarke, Winono, Minn.

PETERSON CAPPING MELTER, Hamburg Chickens, rare old violin.

Elias Fox, Union Center, Wis.

CASE two 60-pound cans clover honey \$15. Prices on quantity lots furnished upon request.

C. S. Engle, 1327 E. 23rd St., Sioux City, Ia.

FOR SALE—500 comb-honey shipping cases. Single tier for 24 4¼x4¼x1½ sections, no glass, at 20c each.

Ohio Seed Company, Wapakoneta, Ohio.

WESTERN BEEKEEPERS—We can demonstrate that you can save money on buying bee supplies of best quality. Write for our latest price list.

The Colorado Honey Producers' Association, Denver, Colo.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list.

American Bee Journal, Hamilton, Ill.

### FOR SALE

NEW HONEY—Atwater offers extra nice product of heavy flow.

FOR SALE—Three-banded Italian queens; untested \$1 each, \$10 per dozen. Tested queens, \$1.50 each; 2-frame nuclei with untested queen, \$4.

Jul. Buegeler, New Ulm, Texas.

FOR SALE—350 colonies of bees with complete extracting equipment, including power extractor, steam boiler, and auto truck, with or without 1922 crop.

Scott McClanahan, Rt. 1, Parma, Idaho.

FOR SALE—White and amber extracted honey; also comb honey. Write for prices. State quantity wanted.

Dadant & Sons, Hamilton, Illinois.

ROBBING PREVENTED or stopped. J. A. B. entrance guards do the trick. Return mail one \$1.

John A. Bloomgren,

Ridgway, Pa.

FOR SALE—Modern standard make typewriter, \$50; or will trade for bees, queens, honey, or offer.

Mrs. Ida Harris,

Box 707, Tuscaloosa, Ala.

FOR SALE—Good second-hand 60-lb cans, two cans to a case, boxed, at 60c per case f. o. b. Cincinnati. Terms cash.

C. H. W. Weber & Co., 2163 Central Ave., Cincinnati, Ohio.

FOR SALE—"Superior" Foundation (Weed process). Quality and service unexcelled.

Superior Honey Co., Ogden, Utah.

### WANTED

NEW HONEY—Atwater offers extra nice product of heavy flow.

WANTED—Bees in exchange, or as part payment on fine unimproved irrigated land in Idaho. Complete description upon request.

Ben. H. Matkins, Hamer, Idaho.

WANTED—To trade, Oliver typewriter No. 9, for reversible extractor. This typewriter is in A1 condition.

Alfred Stutt, Lincoln, Ill.

WANTED—2-frame reversible extractor.

Thomas Hewitt, Witt, Ill.

WANTED—Maple sugar. quote price and state how put up.

Andrew M. Seibert,

Intervilla, Berks Co., Pa.

BEESWAX WANTED—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or your own station, as you may desire.

Dadant & Sons, Hamilton, Ill.

WOULD LIKE TO BUY some more good honey, some beeswax and also maple syrup.

Paul Thomae, 1156 Third St., Milwaukee, Wis.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendering. Fred W. Muth Co., 204 Walnut St., Cincinnati, Ohio.

WANTED—Your order for "Superior" Foundation. Prompt shipments at right prices.

Superior Honey Co., Ogden, Utah.

WANTED—Honey, section, bulk comb and extracted.

Elton Warner, Asheville, N. C.

### SITUATIONS

NEW HONEY—Atwater offers extra nice product of heavy flow.

WANTED—Permanent position by old, experienced beekeeper.

Frank Curl,

Care American Bee Journal, Hamilton, Ill.

WANTED—Man for comb honey production. State age, wages expected, and experience.

B. F. Smith, Jr., Fromberg, Mont.

### REAL ESTATE

NEW HONEY—Atwater offers extra nice product of heavy flow.

### MISCELLANEOUS

NEW HONEY—Atwater offers extra nice product of heavy flow.

PUSH-IN COMB INTRODUCING CAGE, 35c; 3 for \$1. It will do the business. See advertisement in April number.

O. S. Rexford, Winsted, Conn.

YOUR FIRST ROLL developed and printed for 25c.

Hatlett Studio, Fairfield, Ill.

## QUEENS

Write for our catalog of high-grade Italian Queens. Pure mating and safe arrival guaranteed.

Prices for the Remainder of the Season:



1 to 4, inclusive  
\$2.00 each

5 to 9, inclusive  
\$1.95 each

10 or more  
\$1.90 each

Breeders  
\$10.00 each

Introducing cages  
75c each

**JAY SMITH, Route 3  
VINCENNES, IND.**

### Motts' Northern Bred Italian Queens

All selected queens this season, after July 1, \$1 each; select guaranteed pure mated or replaced free, \$1.50 each; select tested, \$2.50; virgins, 60c each.

Plans "How to Introduce Queens" and Increase," 25c.

**E. E. MOTT, Glenwood, Mich.**



## RE-QUEEN WITH FOREHANDS 3-BANDS

### THEY SATISFY, WHY?

Because they are guaranteed to be as good as money can buy. Not a cheap queen, but a queen of the finest quality at a cheap price. Every queen guaranteed to reach destination in first-class condition, to be purely mated and give perfect satisfaction, or money back. Orders filled by return mail.

Untested, 1 to 25, 90c each; 25 to 50, 80c each; 50 to 100, 75c each.

Selected untested, \$1 each. Tested, \$1.75 each.

Better queens for less money.

**N. FOREHAND, Ramer, Alabama**

## HONEY

We are in excellent position to serve beekeepers who do not produce enough honey to supply their trade. We have a big stock of fine table honey of various grades always on hand.

### In 60-lb. Tins, Crystallized

Water white orange	15c	Extra L. A. sage	12c
White sage	14c	Buckwheat	10c

### GLASS AND TIN HONEY CONTAINERS

2½-lb. cans	crates of 100, \$4.50
5-lb. pails (with handles), 1 doz. reshipping cases	\$1.00 case; crates of 100, \$7.00
10-lb. pails (with handles)	crates of 50, \$5.25
60-lb. tins, 2 per case, new, \$1.20 case; used, 25c.	

### White Flint Glass, with Gold Lacquered Wax Lined Caps

8-oz. honey capacity	\$1.50 per carton of 3 doz.
16-oz. honey capacity	\$1.20 per carton of 2 doz.
Quart, 3-lb., honey capacity	.90 per carton of 1 doz.

**HOFFMAN & HAUCK, Inc., Woodhaven, New York**

## 1923—Prices on Nuclei—1923

Order early and avoid the rush which always comes before spring. Note what the following beekeepers say about my nuclei and business methods:

"The fifty nuclei arrived in fine shape and were packed perfectly. I am well satisfied with purchase."

Eldon C. Ankemon, Gowanstown, Canada.

"In reference to your nuclei let me say I will have no hesitation in recommending you as to ability to put up bees for shipment or as to your business integrity."—R. F. Holterman, Brantford, Ont., Canada.

"Bees received O. K. You certainly did well by me. I will do my best to return your good-hearted way of doing business."

T. R. Markel, Wilder, Vermont

3-frame Nuclei Italian Bees, with queen .....\$5.00 each.

3-frame Nuclei Black Bees, with Italian Queen ..... \$4.50 each.

3-frame Nuclei Black Bees, with Black Queen .....\$4.00 each.

One-third down with order to guarantee acceptance.

I guarantee safe arrival and free from all diseases.

We carry a complete line of A. I. Root Co. goods.

**A. R. IRISH, Nuclei Specialist, Savannah Ga.**

Box 134.

## This is the Selling Season

A good label helps your sale. Send  
for label catalog

**AMERICAN BEE JOURNAL, HAMILTON, ILL.**

ATTENTION, PRODUCERS!

**NEW HONEY CROP**

We are ready to receive your new crop advices sending us your samples and state price wanted, how packed and quantity can ship. Terms cash on arrival.

**HOFFMAN & HAUCK Inc., Woodhaven, N. Y.**

**64 cts. UNTESTED QUEENS****MR. BEEKEEPER**

Prompt Service and Satisfaction a Specialty

If you want the best quality that is possible to produce, at the lowest price possible to produce, here is the place to order your queens. I positively guarantee **THAT NO BETTER QUEENS CAN BE BOUGHT, NO MATTER WHERE YOU BUY THEM.** These queens are very resistant to bee paralysis, also foulbrood. When you order a tested queen or a select untested from me I don't go out in the yard and cage the first thing I come to and send it to you, like 50 per cent of the queen breeders do. I send out what I advertise, and I stand behind every queen I ship. If they don't give you entire satisfaction, all you have to do is just return them at my expense and I will cheerfully refund your money. Order a few packages of bees and get those weak colonies of yours in shape for the honey flow. I am prepared to ship by return express. The price is right. A limited number of very fine selected tested queens that would make fine breeders, at \$4.00 each. Safe delivery and satisfaction positively guaranteed.

## PRICES

	1	6	12	100
Untested .....	\$ .85	\$ 4.80	\$ 9.00	\$ 64.00
Select untested .....	1.00	5.70	10.80	85.00
Tested .....	2.00	10.50	19.60	150.00
Select tested .....	2.50	14.40	27.60	175.00

## POUND PACKAGES WITH SELECT UNTESTED QUEENS

1-lb. packages....1 to 12, \$2.35 each; 12 or more, \$2.30 each    2-lb. packages....1 to 12, \$3.85 each; 12 or more, \$3.80 each  
Shipment made by return express. Write for Prices on Package Bees for the season of 1923.

**THE FARMER APIARIES, Ramer, Alabama**

**CORRUGATED COMB HONEY SHIPPING CASES**

Mr. J. E. Crane's article, in a recent number of American Bee Journal, on his success in shipping honey in corrugated shipping cases, has aroused so much interest that we have ordered a stock of these cases for interested customers. These cases are single tier, 24-lb., and made for the regular 4¼x1½ size sections only.

The cases are made sufficiently large, so that cartons may be used for packing sections if desired. Cases are exceedingly strong and should stand freight or express shipment without difficulty. Packed in bundles of 10 cases. Price for 10 24-lb. cases corrugated, **\$2.50**. Larger quantities at the same price.

(Mailing weight of 10 cases, 30 lbs.)

Send us a trial order today.

**DADANT & SONS, HAMILTON, ILLINOIS**

**SUPERIOR ITALIAN QUEENS**

We have 2,000 nuclei in operation and our production of queens should be over 100 queens per day, every one of which we will **Guarantee to be Satisfactory**, and we want to replace all that are not. We have been selling on that guarantee, and our replacements have been few; they must be giving satisfaction.

Untested .....	One, \$1.00; ten or more, \$ .75
Tested .....	One, \$1.75; ten or more, \$1.50

**THE STOVER APIARIES, MAYHEW, MISSISSIPPI**



DON'T DELAY—Get our Prices and we'll get Your Order

## WE SAVE YOU MONEY

**"falcon"**

*Supplies, Queens, Foundation*

**W. T. FALCONER MFG. COMPANY, Falconer, (NEAR JAMESTOWN) N. Y., U. S. A.**

*"Where the BEST Beehives come from"*

### QUEENS OF QUALITY

#### ITALIANS

#### CARNIOLANS

#### GOLDENS

We ship thousands of Queens and thousands of pounds of Bees all over the United States and Canada every year.

Two-comb Regular Nuclei, no extra bees .....	\$3.75	One-pound package Bees, \$2.25 each; 25 or more .....	2.15
Three-comb Regular Nuclei, no extra bees .....	5.25	Two-pound package Bees, \$3.75 each; 25 or more .....	3.60
Two-comb Regular Nuclei, with one pound extra bees .....	5.25	Three-pound package Bees, \$5.25 each; 25 or more .....	5.00
One-comb Regular Nuclei, with two pounds extra bees .....	5.25		

QUEEN FREE with all of the above packages except 1-pound size; will furnish them at half price with these.

#### PRICES OF QUEENS ONLY

1 Untested Queen, \$1.05 each; 25 or more, 91c each; per 100, .....	\$85.00	1 Tested Queen, \$1.57; 25 or more, each .....	\$1.40
1 Select Untested, \$1.19 each; 25 or more, \$1.05 each; per 100 .....	\$95.00	1 Select Tested Queen, \$1.85; 25 or more, each .....	\$1.57
		Breeders .....	\$5.00, \$10.00 and \$15.00 each
		Send for FREE CIRCULAR.	

**NUECES COUNTY APIARIES, CALLEN, TEXAS**

E. B. ACULT, PROP.

#### BARNES' FOOTPOWER MACHINERY

Read what J. E. Parent of Chariton, N. Y., says:

"We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames and a great deal of other work."



**W. F. & JOHN BARNES CO.,**  
995 Ruby St., Rockford, Ill.

Our Honey Labels are Good Labels Send for Catalog.

American Bee Journal, Hamilton, Ill.



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**Waterloo Engraving & Service Co.**

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Engravers, Electrotypers, Commercial Photographers, Photo Retouchers, Designers

Write if you need designs of Signature Cuts, Letter Heads, Labels, Etc.



### ACHORD'S ITALIANS ARE GOOD BEES

Whether you have only a few colonies or five hundred, we believe you will like them, and they will prove a worthy addition to your yard. They are a bright, hustling, three-banded strain, bred primarily for honey-production, but also for gentleness and color. We have spared neither labor nor expense to make them the very best.

#### Price of Queens, June 15 to October 1:

Untested.....	1 to 19, 75c each; 20 or more, 70c each.
Select untested.....	\$1.10 each; 5 or more, \$1.00; 10 or more, \$ .90; 25 or more, \$ .80
Tested .....	\$1.75 each; 5 or more, \$1.65

Safe arrival and satisfaction guaranteed.

**W. D. ACHORD, FITZPATRICK, ALA.**







**"The Lumber  
That Lasts"**

**FOR**

**Bee Hives  
Hive Bottoms  
Hive Stands**

The only lumber that a well informed bee keeper will consider is genuine "ALL-HEART"

"OF COURSE" **"TIDE WATER"  
CYPRESS** "OF COURSE"  
"THE WOOD ETERNAL"

**"Because, why?"—**

Because he has learned by experience that "All-Heart" Cypress resists rot to such a remarkable degree in all cases where extremes of weather conditions—hot or cold, wet or dry—have to be met and overcome, that it is "the only."

*Write our All 'Round Helps Department, for reliable counsel on  
the solution of any lumber problem that's on your mind. Address*

**SOUTHERN CYPRESS MANUFACTURERS' ASSOCIATION**  
1251 Poydras Building, New Orleans, La., or 1251 Graham Building, Jacksonville, Fla.

YOUR LOCAL DEALER WILL SUPPLY YOU. IF HE HASN'T ENOUGH CYPRESS LET US KNOW AT ONCE.

Insist on "Tide  
Water" Cypress  
—you can identify  
it by this mark:



## "GRIGGS SAVES YOU FREIGHT" TOLEDO

With its great system of railroads and electric lines, is the most advantageous point at which to make your purchases on the following. Let us prove this to you.

### SPECIAL CASH DISCOUNTS ON BEE SUPPLIES

For Cash or Exchange for Honey.

Write us what you will need and whether you have Comb or Extracted Honey to exchange, giving particulars as to how packed, kind, etc. We take extracted honey in 60-lb. cans only. No pails wanted.

### HONEY—HONEY—HONEY—NEW CROP

If you wish to buy or sell, write us and we will quote you best cash price.

### FOR SALE—Spot Shipment

Fancy W. Clover, in 5-gal. cans, 2 to case.....at 16c	Light Amber Honey, in 5-gal. cans, 2 to case.....at 12c
Fancy W. Orange (crystallized), in 5-gal. cans, 2 to case...at 14c	Buckwheat, in 5-gal. cans, 2 to case.....at 16c
Fancy W. Sage, new crop, in 5-gal. cans, 2 to case.....at 16c	

Shipping Cases and Friction Top Pails, all sizes. Special prices quoted, according to quantity wanted.

**GRIGGS BROS. CO., TOLEDO, OHIO**  
**GRIGGS SAVES YOU FREIGHT**

## ROOT QUALITY QUEENS

AT REDUCED PRICES  
IN QUANTITY LOTS

PRICES TO OCTOBER 1

C812000—Untested, 1 to 9, \$1.50 each; 10 to 24, \$1.25 each; 25 to 49, \$1.10 each; 50 to 99, \$1.00 each; 100 or over, \$.90 each.  
C813000—Select untested, 1 to 9, \$2.00 each; 10 to 24, \$1.70 each; 25 to 49, \$1.55 each; 50 to 99, \$1.45 each; 100 or over, \$1.35 each.  
C814000—Tested, 1 to 9, \$2.50 each; 10 to 24, \$2.10 each; 25 to 49, \$2.00 each; 50 to 99, \$1.85 each; 100 or over, \$1.75 each.  
C815000—Select tested, 1 to 9, \$3.00 each; 10 to 24, \$2.50 each; 25 to 49, \$2.40 each; 50 to 99, \$2.25 each; 100 or over, \$2.00 each.

### OUR GUARANTEE ON QUEENS

We guarantee safe arrival of queens sent in mailing cages. We agree to refund the money or replace the queen if the one first sent arrives dead; provided the beekeeper receiving the dead or unfit queen returns her at once and in her own shipping cage, properly marked with name and address of sender. No delay in returning the queen can be permitted. This guarantee applies only on queens sent to customers in the United States and Canada.

**THE A. I. ROOT COMPANY, West Side Station, Medina, O.**



## Now Sell Your Honey, and Sell it Well

The beekeeper who has produced a good crop of honey has one more important thing to do—he must sell it. Selling “caps the climax” of the year’s work. If he fails as a salesman, all his hard patience, good sense and good business are needed in selling the crop and so “bringing home the bacon.”

and careful work in producing that fine crop of honey becomes a failure. Brains, ingenuity, enterprise,

We want to urge upon every beekeeper who has a possible local market, to develop that market. By making a local market for his honey, the beekeeper assures himself of success and profit year in and year out. It is in his selling methods that the average beekeeper needs to better his methods and do some hard thinking.

Honey is not hard to sell. It has more “talking points”—it has more interest in it, if you please, than butter, eggs and cheese combined.

What honey needs to sell well is to be put into neat, attractive packages, and then taken to the right place in the right way. Remember, “honey to sell well, must look well.” Also remember that honey to sell well must be taken to the right market, talked well and advertised well. It won’t sell itself.

To help the beekeeper sell his honey, we have just printed a handsome little booklet entitled

### “HOW TO SELL HONEY”

We have put into this booklet the best ideas of the best honey-sellers we know. Its aim in chief is to tell the honey producer how to develop a local market for his honey. It gives him the best business ideas on his selling problem. And it is free. Just drop us a postal card and tell us to send you “How to Sell Honey,” and we will send it by the next mail.

### AIDS TO HONEY SELLING

To sell honey well, the beekeeper may need some of the following articles:

Honey Labels, “Honey-for-Sale” Signs. Glass or Tin Containers, Recipe Booklets, Rubber Stamping Outfits, Mailing Cases, Business Cards, an Observation Hive, Shipping Cases, Letterheads, Glue (for labels), Comb-honey Cartons.

We shall be glad to quote you prices on any of these aids to selling. Our prices are very reasonable, quality the best. You surely will want to see our new honey-label catalog. It’s a beauty. Send for it today.



One of our “Honey-for-Sale” Signs

## THE A. I. ROOT CO., MEDINA, O.

Fifty-two Years in the Beekeeping Business

WEST SIDE STATION